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Resource Allocation at the University: Research on the Determinants of Faculty Morale

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RESOURCE ALLOCATION AT THE UNIVERSITY

Research on the Determinants of Faculty Morale

A Thesis

Presented to

The Faculty of the Department of Sociology

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In Partial Fulfillment

Of the Requirement for the Degree of

Master of Arts

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by

Douglas Craig Schmidt

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APPROVAL SHEET

This thesis is submitted in partial fulfillment of

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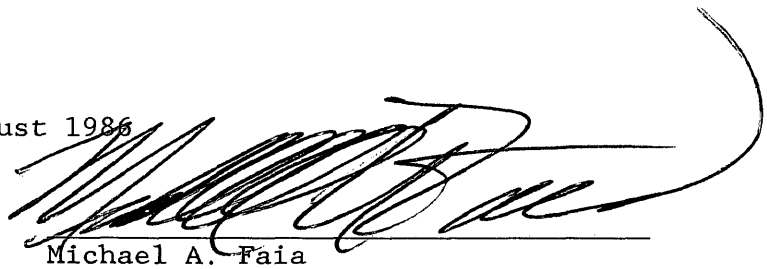
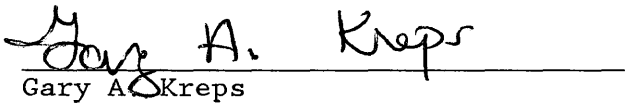


Michael A. Faia

Satoshi Ito



Gary A. Kreps

DEDICATION

This thesis is dedicated to mischievious Sakyamuni Buddha, and to this end, I wish to present one koan and one poem. Without Buddha the project would have never begun. With Buddha, there was no longer a need for the thesis, its essence was already understood.

A monk asked Joshu, "Is there a
higher understanding beyond Zen?"

Joshu replied, "Yes there is."

"What is the nature of this dharma?"
the monk inquired.

Joshu responsed, "It is not Mind,
It is not Buddha, It is not Things."

On a clear day, under a blue sky,
There is no need to seek.
And asking about Buddha
Is like proclaiming innocence,
With loot in your pocket.

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ACKNOWLEDGEMENTS

I take this opportunity to express my gratitude to those individuals and groups who aided and abetted my scholarly efforts during the past two years as a graduate student in sociology at the College of William and Mary.

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I also thank my philosophical support group, Thomas Crapps (the absurd hero), Eric Fedewa, Mark Goodson, and professors Jeffrey Poelvoorde and Neil Watson. Throughout many recondite and sophistic discussions we never let the absurdity of our profundities interfere with the enchantment of our discourse.

Balancing out the Yin of philosophy with the Yang of technology entails a special thanks to intimidating genius of Robert Wise, Andrew Jewell, and especially Farooq Mahmood Butt, who provided the motivation to excel and who encouraged me to expand beyond the traditional boundaries of social science.

A pervasive theme woven throughout the fabric of this project involved reconciliation of material and ideal dichotomies. To this end I must acknowledge Zhi Wei Lu (long live the revolution!), Scott Hoopes, and Jack Sepple. Together we transcended the mind/body dualism each day, during our sisyphean sets and repetitions in the weightroom.

Kendall Lehman deserves recognition for first inspiring me to formalize my investigation of phylogenic and ontogenic phenomena. Her image supplied me with the energy necessary to attain and maintain a supreme level of performance.

Finally, I thank my parents for their support and encouragement throughout my undergraduate and graduate experience. Without their confidence, emotional commitment, and insightful critiques a scholastic endeavor would have been neither possible nor meaningful.

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ABSTRACT

This thesis reports on the theoretical foundations, methodological techniques, and findings of fact on issues raised by an intensive case study of resource-allocation processes at a small state university. The research complemented and localized Professor Michael Faia's broader work on the structure and functions of the academic profession in contemporary institutions of higher learning.

Although the study consisted of three phases and addressed a number of issues, the central purpose of the thesis was to test for the determinants of faculty work-related morale. Accordingly, three hypotheses related to faculty attitude-formation processes were operationalized and tested for their effect on perceptions of the merit and reward association, research productivity, and professorial job satisfaction.

In scope, the research project was both extensive and inclusive: it ranged from data collection and statistical model building to the broadest epistemological concerns. The objective was to construct an empirically grounded theory, apply it to a closely-defined unit of study, and use it to shed light on broader conceptual issues that transcend the sampled institution. A brief synopsis of the thesis study's contents includes:

- o An overview of the research topic objectives presented in three integrated phases of sociological analysis.
- o The theoretical framework for defining, operationalizing, and testing three hypotheses of attitude-formation: the status discrepancy hypothesis, the perceived volition hypothesis and the expectancy hypothesis.
- o The multiple methods utilized to observe, measure, quantify and manipulate data collected from two major sources: institutional archives and a computer-administered questionnaire and interview.
- o The results and interpretations of major findings derived from completed survey data and statistical regression analysis.

RESOURCE ALLOCATION AT THE UNIVERSITY

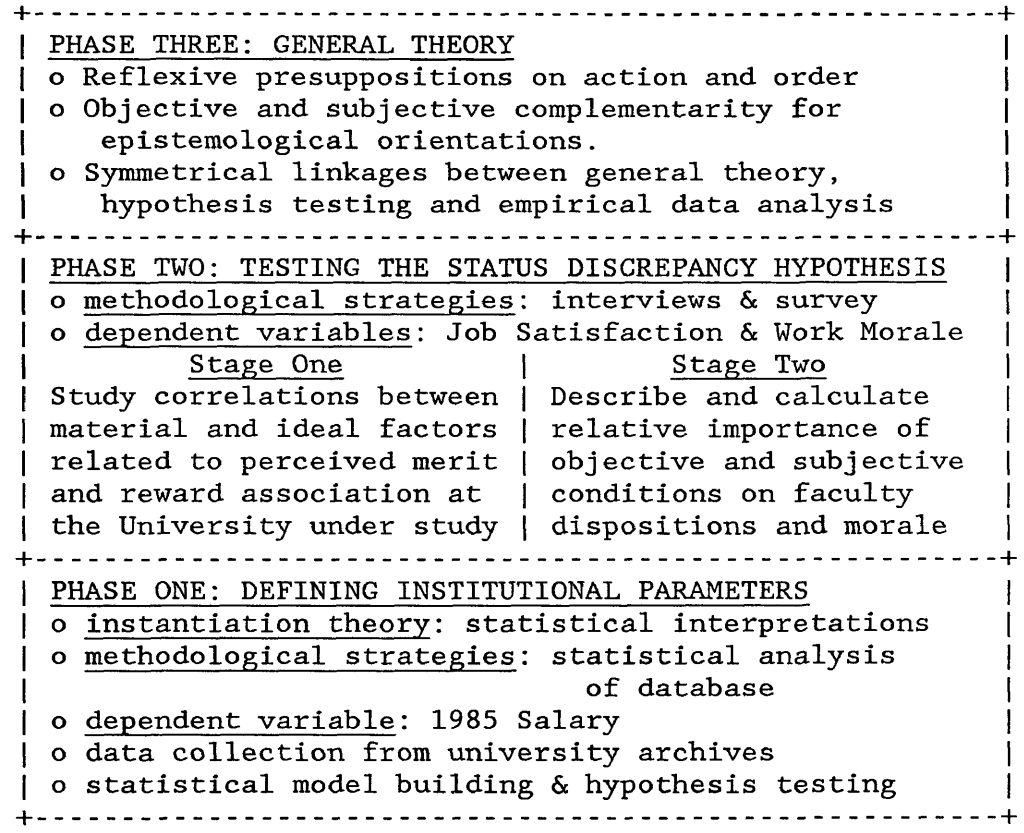
Research on the Determinants of Faculty Morale

INTRODUCTION: THREE ANALYTIC PHASES

Three integrated phases of social research comprised the study of resource and reward processes at the University. Figure 1 illustrates the conceptual inter-relationship among the three phases.

Figure 1

Three Phases of Analysis for the Study of Merit and Reward Processes



RESEARCH OBJECTIVES

Two major themes guided the study of resource and reward processes at the University:

THEME ONE

- To identify the sociological and economic factors significantly influencing the structure of the University's salary distributions.

THEME TWO

- To combine the objective and subjective dimensions of University work experience and examine their effects on faculty morale and job satisfaction.

These two themes were divided into four general research objectives related to the three phases of analysis presented above in Figure 1.

PHASE ONE OBJECTIVES

- To extend existing knowledge on the relative role of various status resource characteristics in the distribution of rewards at the University. Status resources were defined as achieved, ascribed, market, political, and other reward bargaining factors manifested in various amounts by professors at the University.

PHASE TWO OBJECTIVES: STAGE ONE

- To examine the degree to which faculty members accurately perceived their own stratificational position within the University's resource-allocation system. This also included their awareness of institutionalized status discrepancies, and their reported sense of control over important facets of their future careers relative to other professors. Obtaining measures on professors' cognitive representations of the reward system provided the foundation for determining the extent that economic

and social factors acted directly and/or indirectly upon personal dispositions.

PHASE TWO OBJECTIVES: STAGE TWO

- To explore the measurable consequences of positive and negative status disparities in terms of their correlation with job satisfaction and work related morale. In addition, tests were also conducted to operationalize the tenets of expectancy theory and perceived volition theory.

PHASE THREE OBJECTIVES

- To exhibit the efficacy of, and necessity for, multidimensional presuppositions and complementary epistemological orientations. Phase three also examined the meta-theoretical consequences of considering the motivating forces for individual behavior to be a binary choice between rational or non-rational factors at the action level; plus locating the source of institutional legitimacy exclusively in either intrinsic or extrinsic rewards.

Objectives for all three phases are enumerated and explicated from a variety of perspectives in several subsequent sections below. Each phase of the study is analyzed in depth in terms of both its methodological and theoretical dimensions.

PHASE ONE

Conceptualization and Operationalization of Instantiation Theory

Empirical data collection, theory building, and hypothesis testing comprised the first phase of the thesis project. In this phase, statistical procedures were used to delineate the "generalized attribute-reward set" of the University's resource-allocation system. The generalized attribute-reward set models the structural configuration accounting for ninty percent of the variance for the 1985 faculty career salary distribution. An underlying assumption, developed at length below, contends that University resources represent commodities exchanged for certain classes of personal status resources. In this mutual exchange process, resources allocated to professors by the University, i.e., rewards, can be conceived of both generally and specifically. Furthermore, benefits available to faculty involve both monetary and non-monetary dimensions. In their 1983 test of the relationship between meritorious performance and subsequent recognition by the University of Wisconsin administration, Johnson and Kasten provided four definitions of reward:

- Salary increment or merit raises;
- Direct nonmonetary satisfactions such as acclaim from students and peers and feelings of self-satisfaction

and self-worth;

- o Promotions to a higher rank;
- o Internal and external career options such as positions in administration, access to research grants, outside consulting, and government jobs (Johnson & Kasten, 1983: p. 50).

Most empirical research projects focusing on university activities operationalized reward quantitatively and unambiguously as yearly salary or salary increments received by faculty members (Faia, 1985; Fox, 1981; Gordon et al., 1974; Johnson & Kasten, 1983; Katz, 1973; Marshall & Perrucci, 1982; Perrucci et al., 1983; Tuckman, 1977). In the present study, rewards and resource allocations distributed to faculty members by the University are conceptually and operationally synonymous with career salary and yearly salary adjustments.

A model of the University's resource-allocation system was formulated by regressing the dependent variable, 1985 faculty salaries, against a wide range of independent variables. Representing the best prediction of the University's salary structure, this model indicated the significance, magnitude, and signed direction of factors that influence monetary rewards. R-Square, the coefficient of determination, which represents the goodness of fit between the prediction model and the actual distribution of the dependent variable, was calculated from the instantiation of each faculty member's status resource set into the 1985 career salary distribution. The final regression equation accounted for eighty-nine percent of the University career salary variance for 1985, with all variables significant at an alpha level

of 0.0001. Operating at such a low alpha level increased the study's interpretive power, making generalizations from the regression output more meaningful, reliable, and valid. By running T and F statistical significance tests with probability levels set at 0.0001, the risk of Type I error was held at a very low level. In the language of statistical probability, rejecting the null hypothesis of no relation among the independent and dependent variables at the 0.0001 level allowed very high confidence that the relationship between the predictor and criterion variables was not occurring due to random chance or measurement error. Final regression results are fully summarized and interpreted below in the findings section for phase one.

The concept of a generalized attribute-reward set refers to the resource-allocation process considered as a system, whereas status resource sets apply to individual faculty members within the University. Therefore, a semantic and conceptual distinction between attributes and resources is required to prevent unnecessary confusion arising from the differentiation between the institutional and individual levels of analysis. Henceforth, all characteristics of particular professors are referred to as resources, while the set of characteristics and qualifications rewarded by the University are termed attributes.

Interpreting the statistical model of the wage-attainment process at the University required conceptually imbricating two levels of analysis, the general and the particular. Differential career income levels and yearly salary improvements were viewed as

resulting from the instantiation of professors' status resource sets within the generalized attribute-reward set. Instantiation theory therefore suggests that career salary variations can be accounted for by distinguishing certain attributes generally rewarded by the institution, on the one hand, and then matching these attributes against the distribution of personal resources displayed by particular faculty members, on the other. Therefore, salary diversity within the resource-allocation system theoretically occurs from the interaction between generally rewarded attributes and particular professors' possession of certain rewarded resources.

Understanding the analytical differentiation between the two levels, general or aggregate versus particular or individual, is vital for comprehending instantiation theory. At the aggregate level, statistical analysis indicated that past and present administrators and department personnel committees allocated resources on the basis of status resource sets coterminous with the University's generalized attribute-reward set. Captured empirically by the regression equation, the generalized attribute-reward set depicted a composite representation of rewards allocated on the basis of several factors, including:

- Variations in supply and demand markets for different disciplines.
- Collective representations by administrators of what constitutes valuable work.
- Political influence in attracting funding.
- Differential quality of performance among faculty members.

Complementing the macro perspective, at the individual level all professors in the study were conceived as maintaining and continually supplementing a status resource set. Status resource sets conceptually combine personal resources and background characteristics together with supra-individual, structural factors. Composed of skills, talents, previous academic experience, seniority, discipline affiliation and other characteristics or qualities developed over his or her career, status resource sets represent those ascribed, achieved, and structural attributes accumulated by, and belonging to, each faculty member. Many of these resources are re-determined and re-evaluated each year by university administrators departmental chairpersons and personnel committees. Therefore, certain resources, e.g. merit-ratings based upon faculty publication levels, are highly changeable. Others, however, such as rank, discipline affiliation, or years in service exhibit more stability over time. Judging from analysis of the collected database and the regression analysis, status resource sets varied in content and detail from professor to professor; the reward value associated with a given set of resources varied across sets, and probably over time as well.

Conceptually, the status resource set was considered as a proxy for a professor's vita. Operationally, the independent variables collected and constructed from University archives represented the quantifiable subset of each faculty members' status resource set. Viewed theoretically, a status resource set combined certain elements from sociological models of status attainment together with economic

models describing the effect on salary level of changing supply and demand characteristics for certain types of skills. Although status resource sets are conceived as "individual phenomena", in contrast to the generalized attribute-reward set, this does not necessarily imply that the value received by a faculty member for a particular status resource set directly mirrors his or her individual initiative, merit, or "worth" as an professor. Therefore, instantiation theory avoids the twin errors of individual reductionism and structural reductionism, two extremes common in similar theoretical frameworks purporting to describe and explain human action and social order. The remainder of this section develops this point further.

Multivariate regression techniques were applied to the three-hundred and sixty eight faculty members in the database to produce the best equation modeling the University's generalized attribute-reward set. Next, professors' salaries were predicted on the basis of their instantiation into the generalized attribute-reward set. In other words, individual faculty salaries were formulated as a function of the correspondence between the generalized attribute-reward set and three-hundred and sixty eight faculty status resource sets. Sources available through the institution's archives and master personnel file were collected to quantify the three main areas of professorial merit, i.e., teaching ability, research productivity, and university service. According to the present Dean of Arts and Sciences, current University policies regarding salary allocations are heavily based on these three aspects of scholarly performance. In addition, many studies researching the

structure and function of reward processes in higher education consider performance factors to be highly influential predictors of a professor's salary (Johnson & Kasten, 1983; Katz, 1973; Keaveny & Allen, 1983; Marshall & Perrucci, 1982; Tuckman, 1977). However, preliminary statistical analysis from University data sources determined that, in general, faculty productivity levels alone were not the most significant determinants of reward.

Instead, faculty members in computer science, economics, history, education, and especially the law and business schools, received higher salaries than predicted solely from measures of personal, individual-level resources such as seniority, teaching quality, scholarly research productivity, committee service, and rank. This finding implied that the University's generalized attribute-reward set deviated appreciably from a pure meritocracy. Conceived in terms of a Weberian ideal type, a purely meritocratic reward system would exist where resource-allocations and yearly salary adjustments were distributed entirely on the basis of merit factors, i.e., personal performance and productivity. An attempt was made to determine the extent of deviation from the meritocratic ideal type by constructing a productivity index. Treating the productivity index as the dependent variable, and then regressing the remaining ten predictor variables against the index, made it possible to capture the signed direction, magnitude, and significance of certain factors and their relationship with merit. The result of this and other hypothesis tests are reported below in the findings section for phase one.

PHASE ONE: METHODOLOGICAL STRATEGIES

Description of the Database

Research topics in phase one explored the structure of salary allocation patterns at the University. Methods for generating information about the configuration of the resource and reward process included:

- The utilization of the five-year time-series database taken from the personnel files of the University.
- The collected faculty productivity records for the last 5 years. Records included were publications counts of books and journals; student evaluations of teaching performance and teaching awards received; University committee memberships, both appointed and elected; departmental chairpersons, past and present; and number of outside grants received from federal, state, and local agencies or foundations.
- Subroutines from the Statistical Package for the Social Sciences (SPSS), version X, revision 2.1, were employed to derive an equation indicating the relative weight of factors related to faculty income and salary levels.

Market and political influences on the 1985 salary distribution were captured by creating several indicator or "dummy" variables (coded 1 or 0) testing for salary differences related to academic field. Multivariate regression procedures from the Statistical Package for the Social Sciences (SPSS, Version X, Revision 2.1) were employed to calculate the relative impact of professorial rank, years of seniority, sex, research productivity, teaching ability, service

to the University, discipline affiliation, and other potential determinants of 1985 salary levels. Specifically, the goal was to clarify the relative impact of several classes of status attributes, e.g., meritorious work, contextual market and political forces, on the 1985 faculty salary distribution. A number of sociological, economic, and higher education journals contain a large body of literature with a similar theme (Faia, 1985; Fox, 1981; Johnson & Kasten, 1983; Gordon et al., 1974; Katz, 1973; Keaveny & Allen, 1983; Marshall & Perrucci, 1982; Marsh & Dillon, 1980; Perrucci et al., 1983; Tuckman, 1977).

Two significant features of the project distinguished it from comparable studies, in terms of the model's predictive accuracy and interpretive power for explaining the results. The first positive feature involved the fecundity of the empirical archive data; the second concerned the complementary correspondence between the objective and subjective dimensions of the research methods. Access to a five-year time-series database (1980 1985) collected from master personnel files, as well as additional institutional records at the University comprised the empirical foundations of the study. Relevant attributes of three-hundred and eighty four faculty members were obtained from these files. A final sample population of three-hundred and sixty eight professors remained after sixteen faculty members were removed from the analysis due to missing data or nonstandard teaching assignments. Many variables taken from the personnel files were included in various stages of the analysis, e.g., salary, field, years in rank, seniority, contract length,

current rank, race, tenure status, degree granting institution and gender. Augmenting this source was the corresponding archival material composed of faculty publication records, departmental chairpersonships past and present, committee memberships, plus federal, state and private grants received. All information was collected from various data sources located on the University's campus.

Diachronic salary trends were plotted by combining these resources together with several SPSSX system input files utilizing the PRIMENET 9955, PRIMOS (Rev 19.4.2) supermini computer resources of the University. Historical patterns in faculty salary increases invariably escape those researchers limited to synchronic, one or two year data samples (Fox, 1983; Gordon et al., 1974; Katz, 1977; Marshall & Perrucci, 1982; Tuckman, 1977). Charting trends became an invaluable method for discerning subtle changes in market forces and pinpointing vested political interests that affect salary levels in an interactive, non-obvious fashion. For instance, time-series analysis over the five year period indicated that for the past two years the percentage salary increases for the law and business schools ran slightly over seventeen percent, whereas the average increases for Arts and Sciences were only eleven percent. Although most faculty members were aware of the salary discrepancies between law and business versus the Arts and Sciences, the actual degree of the differences was not generally known. Furthermore, time-series analysis became useful for testing the effectiveness of affirmative action programs by indicating movement towards or away from a

meritocratic and non-discriminatory allocation system (Krauze & Slomczynski, 1985).

Twelve statistically significant independent variables were found to represent the resource and reward system at the University. The model built from the regression equation accounted for eighty-nine percent of the total variance in 1985 faculty salaries. All variables were significant at an alpha level of 0.0001. While this reported R-Square applied to the salary equation for the entire University, certain research questions required respecification and substitution of the dependent variable in the equation. Final results from the database analysis are reported below in the findings section for phase one.

PHASE TWO

Testing the Attitude-Formation Hypotheses

Phase two was analytically divided into two stages. Testing three attitude-formation hypotheses related to faculty morale levels was the main theoretical objective of this phase. One important potential explanans of faculty morale was the status discrepancy hypothesis. Adapted from Max Weber's work on class, status, and power, the status discrepancy hypothesis asserts that structured discontinuities between an individual's merit and his or her level of reward "creates a strain for individuals and forces them to follow a course of action designed to bring their statuses back in line with each other" (Geschwender, 1967: 163). In the present study, however, it became apparent that separating merit from non-merit or extra-merit factors was difficult due to significant intercorrelations, both statistical and conceptual, among the independent variables. Therefore, a status discrepancy was operationally defined as the signed disparity and magnitude of the difference between the level of reward recorded for each professor's actual status resource set, i.e., 1985 career salary, minus the predicted value created by the instantiation of the status resource set with the generalized attribute-reward set. If the actual salary was greater than the predicted one, the professor was deemed positively discrepant; if the predicted salary was greater, the

professor was deemed negatively discrepant.

Statistically, a status discrepancy was manifested as the residual disparity between a given professor's level of reward for his particular resource set, on the one hand, and the general level of reward allocated for those attributes in the University, on the other, when the resource-allocation system was considered as the unit of analysis. Residuals, the statistical indicator of the conceptualized status discrepancy, were therefore the signed difference between a professor's actual salary and the one predicted on the basis of his resource set. Although random variations between the observed and predicted salary were expected due to measurement error, statistical rounding, and capricious salary allocation policies, large residuals, either positive or negative, theoretically indicated the existence of a significant status discrepancy.

As mentioned above, status discrepancies potentially occur in one of two directions: either positive (over-compensation) or negative (under-compensation). Status overcompensation existed when the reward received for an individual's status resource set exceeded that predicted on the basis of the generalized attribute-reward set for the University. Conversely, Status undercompensation occurred where the professor's status resource set was undervalued in comparison to institution structures as a whole. Depending on the direction and magnitude of the disparity, over- and under-compensation were hypothesized to be directly and/or indirectly related to faculty attitudes regarding status legitimacy, motivational levels, job satisfaction, and work-related morale. If

the status discrepancy hypothesis was a valid explanans for attitude-formation, then over-compensated status discrepants should display greater levels of morale and job satisfaction when compared to their under-compensated colleagues. Discovering whether the correlation between salary structures and personal dispositions was a direct or indirect relationship became a key element for achieving the broader conceptual aims of the project.

PHASE TWO: METHODOLOGICAL STRATEGIES

Data Production for Testing the Attitude-Formation Hypotheses

Methodologically, phase two supplemented the time-series database analysis in phase one through the use of intensive interviews and a questionnaire survey of selected faculty members at the University. The strategy of using time-expansive database information in conjunction with questionnaire surveys occurred infrequently in other studies reported in the literature. Many researchers rely either on university personnel files, (Fox, 1981; Gordon et al., 1974; Katz, 1973; Johnson & Kasten, 1983; Marsh & Dillon, 1980; Marshall & Perrucci, 1982; Perrucci et al., 1983; Tuckman, 1977). or on an administered questionnaire (Birnbaum, 1983; Faia, 1985; Keaveny & Allen, 1983), rarely both. By conjoining these methods in a succinct and incisive manner, it was possible to assess the three-dimensional relationships constituting:

- o objective discrepancies between status resource sets and the generalized attribute-reward set.
- o intersubjective collective representations of what administrators consider as valuable status resources.
- o subjective individual perceptions and attitudes hypothetically linked to resource-allocation policies.

Concise conclusions illustrating the relationship between equitable salary allocation decisions based on merit and the present

conditions at the University were made feasible by complementing the three phases of analysis with the triangulated epistemological orientation. Following the second stage of phase two, the empirical nexus among resource/reward discrepancies (phase one), the degree that individuals perceive these disjunctions (phase two, stage one), and their possible effect upon motivation, morale, and productivity (phase two, stage two), was defined in a methodologically valid and theoretically precise manner. Intersecting these modes of analysis increased the potential for producing insightful analyses and reliable generalizations from the data.

Phase two provided the epistemological complement to the "hard-data" examined in phase one. In addition to investigating three hypothetical models of faculty morale at the University, research in phase two also augmented the statistical database analysis, used in phase one to formulate a representative model of resource-allocation patterns at the University. Knowledge of the significant components and structural dynamics in the resource and reward system created the empirical foundation from which to test the status discrepancy hypothesis defined above in the previous phase two synopsis. Two other propositions were also operationalized and tested, the perceived volition hypothesis and the expectancy hypothesis.

The perceived volition hypothesis basically asserted that perception of greater control by professors over work-related conditions translated into increased levels of faculty job satisfaction. Likewise, the expectancy hypothesis also emphasized

the importance of subjective perceptions on attitude-formation processes. Derived from the tenets of expectancy theory, this hypothesis premised that perceptions of a close association between performance and rewards were positively related to higher reported levels of faculty morale.

Intensive interviews were undertaken using two congruent data collection instruments. A computer-administered survey program and a pencil and paper questionnaire were the methods used to assess three relationships:

- To what degree were the present reward structures perceived as primarily merit-based by members of the faculty?
- Do disparities between faculty resource sets and corresponding levels of reward produce measurable differences in research productivity, job motivation, and overall faculty morale?
- If significant differences in reported satisfaction and motivation did exist, were they related directly to structured status discrepancies or indirectly, through subjective perceptions of the salary structure?

Methodological techniques for the second phase involved conducting interviews with a statistically generated sample of professors exhibiting various degrees of status discrepancy. Faia defines the selectivity criteria for operationalizing status discrepancy in his 1985 National Science Foundation grant proposal:

> "rewards" will be predicted on the basis of several factors, including "productivity," and those individuals having high residuals (either positive or negative) for actual reward as compared with predicted reward will be deemed high on status discrepancy. (Faia, 1985: p. 2)

Using the temporary variable ZRESID (standard deviation scores of the residuals) computed by SPSSX, a non-proportionate, stratified random sample was developed in the following manner. A total of forty-five faculty members (about ten percent of the total population of professors at the University) were selected from the database. Fifteen of the professors were members of the professional schools, law, business, and education, and the remaining thirty were drawn from Arts and Sciences. A personal interview was requested of all professors in the sample. Total response rate for the forty-five selected faculty respondents was one-hundred percent. All of the sampled professors permitted themselves to be interviewed, and all interviewed professors took the questionnaire survey in either the computer or written form. As illustrated in Figure 2, the sample was stratified according to the magnitude and signed direction of each professor's residual Z score. Cutting points for the analysis were set at two locations, one standard deviation above and one standard deviation below the predicted mean. Three columns were thereby created, separated at:

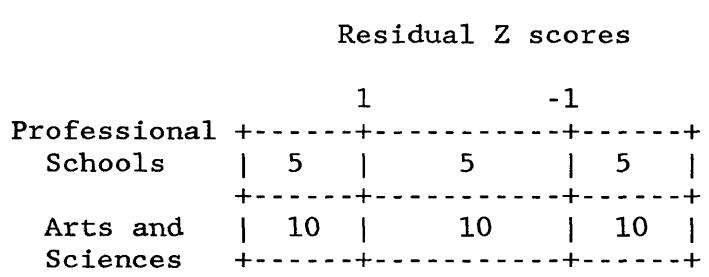
- Greater than one positive standard deviation.
- Between positive one and negative one standard deviation.
- Greater than negative one standard deviation.

This trichotomous division was cross-cut by the dichotomy of the professional schools versus Arts and Sciences. Although faculty members in the professional schools comprised only about twenty-four percent of the total faculty at the institution, their representation in the sample was thirty-three percent. Over-representing the

professional school faculty occurred for theoretical reasons elaborated upon below.

Figure 2

General Sample Design



An innovated methodological technique was tested during the thesis research. Twenty-eight of the forty-five interview sessions with selected professors were conducted through an on-line computer program conceived, coded, and operationalized by the author. Written in the Pascal language, the survey program combined the structured format of a self-administered paper-and-pencil questionnaire along with the spontaneity of a personal interview. Every one of the seventy-four total questions scrolled onto the screen one item at a time. In addition, the program included dynamic range checking, which automatically informed the professor when an answer accidentally fell outside the valid response range. For example, if the valid response range for a certain question ran from 1 to 5, entering inappropriate answers, i.e., 7 or 11, would produce an error message. The survey was programmed to proceed to the next question only when a valid response had been entered.

Using the experimental computer program for collecting this type of data was unprecedented. Not surprisingly, this methodological

innovation resulted in both advantages and disadvantages. One obvious advantage was the reduction in the volume and density of text and characters presented to each professor. Crowding too many questions onto several columns of a printed page is visually distracting to the respondent. Furthermore, the program was planned so that preceding and subsequent items were not visible, thereby minimizing the tendency for creating a response-set pattern in the mind of the interviewee. This feature was implemented to prevent an individual from altering earlier answers simply to remain consistent with a previous set of responses.

Computer facilities at the University have evolved to the point where most academic buildings, and many faculty members, had direct access to cathode-ray terminals. One of the only disadvantages of using the computer based survey methods, however, revolved around the fact that terminals were not readily available to a number of the selected faculty respondents. In addition, several other professors were reluctant to complete the questionnaire without an opportunity to review the questions in greater detail. To circumvent these obstacles a standard "pencil-and-paper" questionnaire was also developed in order to administer the survey to faculty members lacking immediate access to the computer system. Pencil-and-paper questionnaires were used to record responses for seventeen of the forty-five cases. Although the response medium and question ordering differed for the two methods, the wording and total number of questions asked was identical. Statistical analysis of the faculty response distribution indicated that both techniques were effective,

and use of the dual methods did not seem to bias the responses. All questions asked in both versions of the survey are reported below in Appendix A.

Survey questions focused on faculty attitudes and experiences on a number of relevant topics ranging from perceptions of salary inequalities to sources of scholastic motivation and work-related morale. Subjective and inter-subjective dimensions of faculty attitudes addressed include:

- Knowledge of salary and resource-allocation procedures.
- Perceived association between professorial merit and reward at the institution.
- Previous and projected scholarly productivity.
- Personal competence.
- Feelings of institutional adequacy.
- Job satisfaction.

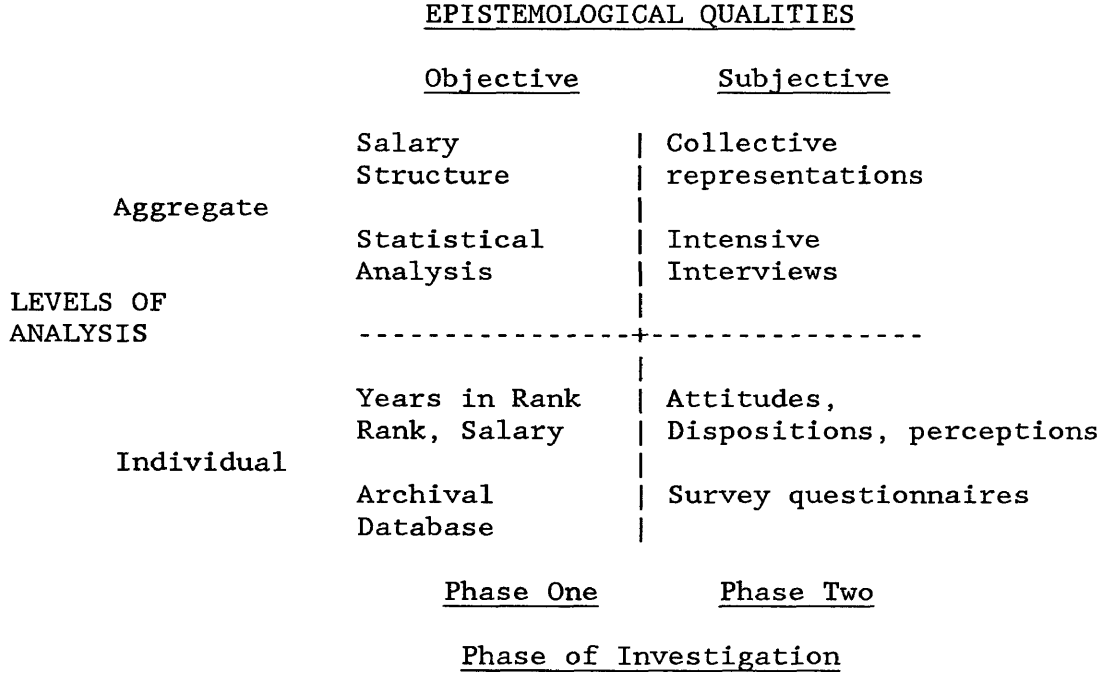
Combining concise methodological indicators with objective and subjective modes of analysis created a multidimensional epistemological orientation consisting of:

- objective structural social facts, e.g., the University's resource-allocation system.
- subjective feelings and individual adaptations to their conditions.

The four-fold table exhibited in Figure 3 illustrates the connection:

Figure 3

Epistemological Modalities and
Methodological Techniques for
Operationalizing Phase One & Two



STRATEGIES FOR CONNECTING PHASE ONE WITH PHASE TWO

In an effort to research and improve the data accuracy of the first two phases, validity and reliability checks from various information sources were run. By calculating the degree of consensus among the sampled professor's statements about the existence, absence, and operations of the salary stratification system, the perceptual diversity of professorial representations of the University's resource-allocation structure became more apparent. For example, interviewed faculty members were asked to comment on changes in departmental morale over the past five years. In many cases, individuals teaching in the same department disagreed upon the morale trends occurring among their colleagues over time.

Another compatibility check was undertaken to compare the relationship between subjective perceptions of personal job performance, e.g., self-rated teaching, research, and service abilities, on the one hand, versus objective measures collected from archival sources, e.g., recorded publications, teaching awards received, elected and appointed committees served on, on the other. These correlations served as interesting cross-references to ascertain the quality and precision of the interviewee's responses. For example, a group of survey questions researched the connection between reported level of faculty article publications and the number recorded in an annual list published by the Dean of Graduate Studies.

This test was undertaken to see whether the article counts collected from the past four years adequately captured publication rates over time. Pearson's correlations between the publication list and the reported career amount were fairly substantial (r=0.63). The reported number of articles published by professors averaged between five to ten over the course of a professor's career. When the time period was limited to the past five years, the reported article publication average was less, being about three to four articles per faculty member. Fifty percent of the interviewed faculty members had never published a book. Twenty eight percent reported publishing one or two books, and twenty-two percent had published more than three.

In addition, several questions tapped into sources of status resource information not available from the University Archives (e.g., career publication rates, job applications to other Universities). If time had permitted a comprehensive survey of all professors in the University these data would have been useful as additional independent variables for predicting the 1985 salary distribution. Statistics describing a number of relevant findings from the intensive interview sessions are reported below in the phase two write-up.

After survey and interview data were collected and coded, multivariate regression and bi-variate statistical analyses were run using SPSSX and QSASG graphics. Correlations and covariance between positive or negative status discrepancies, perceived volition, perceived merit/reward association and feelings of job satisfaction were examined. Comparing the database research with survey and

interview results generated a fertile supply of descriptive data. Information from both phases was concatenated together in order to operationalize three main hypothesis tests. Ascertaining the effect of structural status discrepancies on the perceptions, motivations, and morale of faculty members constituted the major theoretical thrust of the thesis project. However, two auxiliary hypotheses were also examined, operating under the theoretical panoply of expectancy theory and perceived volition theory. Final results for all three hypothesis tests are reported below in the findings section for phase two; meanwhile, the following review of the attitude-formation hypotheses enumerates the theoretical foundations of the study's hypotheses.

PHASE TWO: CONCEPTUAL PERSPECTIVES

Theoretical Foundations of the Three Attitude-Formation Hypotheses.

Combining several methods to research faculty work-related morale was the main objective in phase two of the project. A composite morale index was constructed from thirteen items in the questionnaire survey to test three hypotheses regarding the determinants of faculty job satisfaction. In addition to exploring the validity of the status discrepancy hypothesis as an explanans for professorial morale, two complementary theories of attitude-formation, expectancy theory and perceived-volition theory, were also operationalized and tested. All three hypotheses used in the study originated from distinct, though often convergent, theoretical perspectives. This section explores the similarities and differences existing in the theoretical foundations of the attitude-formation hypotheses. Previous sections of this thesis described the manifold methodological techniques formulated to capture the structural and perceptual dimensions of the University resource-allocation procedures. Database analysis and survey questionnaires were used to determine the impact of objective and subjective factors on professorial job satisfaction. Discerning the relative degree to which faculty morale covaried with objective economic and social conditions, on one hand, or with subjective

perceptions, on the other, cannot be fully understood through empirical data analysis alone, however. Presuppositional commitments to various paradigmatic perspectives are also implicit in any study of the knowledge, attitudes, and practices of social actors. Therefore, attention to theoretical levels of analysis was also required. This section describes how certain conceptual issues were handled substantively. In addition, examples from contemporary and historical projects are discussed to illustrate methods used by other researchers when dealing with dualisms between structural and perceptual dimensions of analysis. Phase three, the following section, elaborates further upon problematic dualisms between "objective" and "subjective" epistemological qualities from a meta-theoretical level.

Statistical results illustrating the significance, signed direction, and magnitude of correlations between objective conditions, perceptual mediation, and subjective dispositions were crucial for testing the attitude-formation hypotheses. However, they were also essential for understanding the broader philosophical issues researched in the study as well. To facilitate a comprehensive examination of these issues the investigation of faculty morale in phase two was divided into two analytically autonomous, but empirically complementary stages. The aim of the first stage in phase two was to determine faculty perceptions of the University's resource allocation system. Expectancy theory and perceived volition theory asserted that perceptions of the relationship between merit and reward, and perceived ability to

influence one's lifespace, respectively, exhibit measurable empirical consequences for faculty morale levels. These two hypotheses were contrasted with the status discrepancy hypothesis, which posited a direct, linear linkage between objective economic conditions and subjective attitudes. From this structural perspective, perceptions and subjective mediations were considered ancillary and epiphenomenal in comparison with institutionalized status discrepancies; cognitive mediations were reduced to adapting one's attitudes in response to external economic conditions.

In the second stage of phase two, both subjective and objective variables were combined by a regression equation which operationalized all three hypotheses. Statistical tests were conducted to determine which of the attitude-formation hypotheses exhibited the greatest covariance with the reported distribution of job satisfaction collected from intensive interviews with the sampled faculty members. Since the three hypotheses were based upon different presuppositional commitments the outcome of the analysis impacted upon both substantive and analytical concerns. Expectancy theory and perceived volition theory emphasized the importance of subjective perceptions, thereby allowing for intrinsic sources of job satisfaction. On the other hand, the status discrepancy hypothesis focused exclusively upon structured disparities between status resources and monetary rewards; therefore, it presumed that faculty work-related morale was a response to extrinsic conditions. Test results for all three hypotheses are reported below in the findings section for phase two.

Stage one in phase two concentrated upon individual perceptions of the University reward structure. Inspired by the work of Kurt Lewin and his field theory model (Lewin, 1939; Hampden-Turner, 1982), it was postulated that institutionalized status disparities potentially affect faculty attitudes and behaviors in an indirect, as well as direct, manner. That is, economic inequities hypothetically affect dispositions directly, in terms of status discrepancies and salary levels, on the one hand, and indirectly, through the mediation of faculty members' perceptions about their relative positions in the University's reward structure, on the other. If the status discrepancy hypothesis most accurately described the morale distribution, it supported the contention that job satisfaction is related to extrinsic rewards, exterior and anterior conditions. Conversely, depending on the empirical validity of the two other hypotheses, faculty work-related morale would not be directly linked to economic conditions. This occurred since expectancy theory and perceived volition theory both emphasized the role of perceptual filtering as the primary determinants of morale. Therefore, job satisfaction would be correlated to actual distribution patterns through perceived performance and reward associations, which do not necessarily mirror existing economic structures.

Postulating the possibility for indirect, as well as direct, influences on work-related morale and job satisfaction broadened the methodological and analytical scope for testing the determinants of job satisfaction. Instead of assuming a simple causal connection between objective reward levels and epiphenomenal subjective states

of mind, the added dimension of perceptual filtering provided a more dynamic and realistic predictive model. Theoretically, the concept of perceptual mediation adumbrated a dialectical tension between volitional and conditional phenomena. For example, to the extent that dispositions are related to perceptions, and do not merely reflect objective conditions, the analytical and substantive potential for significant volitional choices increases. Two definitional illustrations capture the tension between volition and condition:

- If a professor has the capacity to alter or control his or her knowledge, attitudes, and behavioral responses through "selective attention" and "perception management" he or she increases his or her autonomy from adverse environmental circumstances.

- If a professor's dispositions are simply a function of exterior and anterior social forces, he or she exhibits less autonomy over his or her life chances.

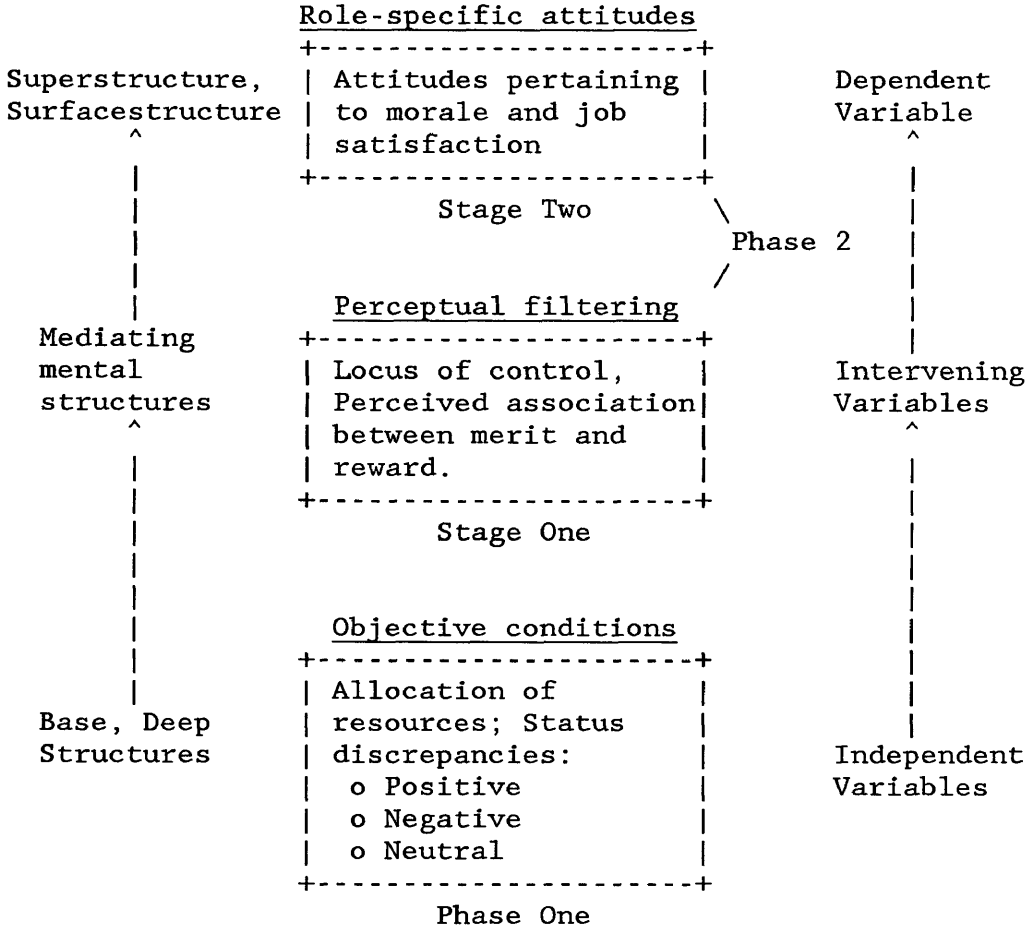
Alexander recognizes the dialectical nature of the volition condition dualism when he argues that:

> The individual would be free to the degree that he could refer to symbolic ideals, yet he would be constrained by the simultaneous reality of his external, material, and normative environment (Alexander, 1983: p. xxi).

Illustrated in Figure 4 below is the three-tiered model constructed to delineate the hypothetical interactions among structural conditions, cognitive perceptions, salary satisfaction and work-related morale.

Figure 4

The Proposed Interrelation between Phase One and Two



In Figure 4 the intervening variable, perceptual filtering, was included in accordance with the study's commitment to multidimensional presuppositions. Naturally, it was also possible that the objective conditions could impact directly upon faculty attitudes towards their work, independent of any perceptual processes. Figure 4 is a model of what to look for in the investigation, not a description of what was found.

Faculty perceptions of the reward structure were emphasized as a

potential explanans for job satisfaction following Keaveny and Allen's premise that work-related morale was most closely correlated to individual awareness of the performance-reward association operating in the resource and reward system at the University (Keaveny & Allen, 1983: p. 14). Restated in terms of expectancy theory, this proposition asserted that objective conditions influence subjective dispositions and behavior through the mediation of cognitive filtering. Elaborated further below in the phase three summary of philosophical and meta-theoretical concerns, this tripartite model attempted to transcend the sterile dualisms of idealism - materialism, subjectivism - objectivism, and nominalism - realism.

Operating with the cognitive mediation model of perceptual filtering illustrated in Figure 4 above, the second stage of phase two explored the relative impact of the independent and intervening variables upon the major dependent variable, faculty morale. Independent variables included degree, magnitude, and signed direction of status discrepancies, (i.e., residual scores taken from the regression equation), other predictor variables from the original regression analysis, and several new variables derived from the questionnaire survey. An intervening variable, subjective perceptions of the association between merit and reward, was utilized as both a dependent and independent variable. A faculty morale index consisting of reported professorial job satisfaction scores constituted the dependent variable for phase two. As illustrated in Figure 4, stage two intersected with stage one by operationalizing

the following question: "Are the effects of social and economic conditions on knowledge, attitudes, and behaviors direct or indirect?"

A propositional summary of all three hypotheses tested in phase two includes:

Status Discrepancy Hypothesis

- Institutionalized disparities existing between the University's general reward structure, on the one hand and individual professors' relationships to it, on the other, produce measurable effects on work-related faculty morale, research productivity, and job motivation. Undercompensated professors hypothetically exhibit greater job dissatisfaction, whereas overcompensated professors should exhibit greater levels of job satisfaction.

Perceived Volition Hypothesis

- Self-perceived volition strengthens associated feelings of enhanced self-efficacy resulting from the perceived ability to exert control over life chances. Perception of greater internal control over personal surroundings translates into increased job satisfaction and work-related morale.

Expectancy Hypothesis

- Perceptions of a close association between performance and reward are causally and positively related to higher reported levels of faculty morale. Conversely, perceptions of a weak association have a negative relation to faculty morale.

All three of these perspectives were regarded as potential explanantia modeling individual attitude-formation processes. Empirical analysis was undertaken to elucidate the project's general epistemological and theoretical focus, i.e., "What is the connection between objective conditions, intervening subjective perceptions and personal dispositions?"

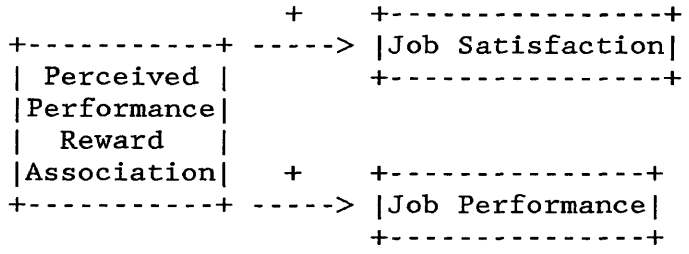
The status discrepancy hypothesis was operationalized by

correlating the positional rankings of highly positive, negative, and neutral status discrepants from the professional schools and Arts and Sciences against the survey responses. Specifically, theoretical assertions of the positive linear relationship between salary level, feelings of control over working conditions, and job satisfaction were tested.

Expectancy theory, which is essentially a formalization and adaptation of the philosophical position of psychological hedonism, predicted that an individual's future actions occur so as to bring the maximum congruence between the perceived pleasure derived from performing an activity, on the one hand, plus the likelihood that the desired pleasure will occur. In other words, the hedonistic calculus is expressed as: occurrence = desirability + probability. Keaveny and Allen interpreted reviews of the literature on expectancy theory and concluded that "the single best predictor of job satisfaction seems to be the performance-outcome expectancy" (Keaveny and Allen, 1983: p. 14). Figure 5 is an interpretation of expectancy theory taken from Keaveny and Allen's work on "the implications of an across-the-board salary increase" (Keaveny and Allen, 1983: p. 14).

Figure 5

Relationship Between Job Performance, Work-Related Satisfaction and the Performance/Reward Association



Social psychologist Kelly Shaver's work on social perception and attributional processes also informed the second stage of phase two (Shaver, 1975). Shaver hypothesized that those individuals occupying favorable positions vis-a-vis income and power rankings within a status hierarchy begin to develop "generalized expectancies for internal versus external locus of control reinforcement" (Shaver, 1975: p. 90). This concept was operationalized and tested with the following two circular causation hypotheses:

- o Self-perceived volition strengthens associated feelings of enhanced self-efficacy resulting from the perceived ability to exert control over life chances.
- o Greater perception of internal control over personal surroundings translates into increased job satisfaction and work-related morale.

An empirical test of Shaver's perceived volition hypothesis was conducted by constructing a measure of faculty dispositions regarding their perceived ability to influence policies and decision-making within their own departments. To operationalize this hypothesis a section of the questionnaire was developed that measured professorial perceptions of volitional versus conditional aspects of their job

experience. For illustrative purposes, a positivistic definition of volition and condition was employed as the benchmark for the hypothesis testing. The objective here was not to resolve the hoary freewill/determinism debate, but instead to see if and how external conditions impinge upon subjective perceptions of volition. Several questionnaire items recorded faculty members' expectancies regarding the amount of influence they believed they exerted in their academic environments, both institutional and departmental. Queries about the volitional and conditional experiences of University professors were asked in order to discover their correlation with job satisfaction. Stated hypothetically, the research question at issue was:

> Do professors who indicated greater influence over departmental decision-making report greater job satisfaction when compared to those who felt they had little control over their immediate academic environment?

The perceived volition hypothesis was operationalized with the following question asked in the survey:

> How much opportunity do you feel you have to influence the policies of your department?
>
> [1] A great deal [4] Very Little
> [2] Quite a bit [5] None
> [3] Some [U] Uncertain

This question appeared as one of the items in the computer-administered survey given to the non-proportionate, stratified, random sample of professors selected from the database.

Expectancy theory and perceived volition theory share several assumptions. Both theories emphasize perceptions of social conditions, rather than structural factors themselves, as being the

determinants of individual attitudes towards their work. For expectancy theory, perceptions of a close association between performance levels and subsequent rewards are significantly related to increased job satisfaction. Likewise, perceived volition theory focused upon perceptions of high internal control over individual lifespace, e.g., influence in shaping departmental decisions. Stated propositionally, Shaver's hypothesis claimed that reported perceptions of a generalized locus of control were hypothetically related to an increase in morale, motivation, and potential productivity. In contrast to the phenomenological assessment of faculty morale accentuated in the two other theoretical perspectives, however, the status discrepancy hypothesis focused upon the relation of reported job satisfaction to structured patterns of status discrepancies revealed by database analysis.

Two complementary motives supported the inclusion of all three hypotheses into the thesis study. First, including the trio allowed for more comprehensive tests of both objective and subjective factors related to job morale. Second, results from the empirical analysis also pertained to important philosophy of science questions related to each perspective. For instance, if any or all of these three hypotheses significantly captured morale variance it would support the materialistic tenets of the positivist paradigm. Positivism is not a monolithic perspective, however. Many definitions of positivism exist, some of which offer subtly different descriptions and prescriptions of the proper strategies and tactics for social science (Halfpenny, 1982: p. 90). Therefore, to avoid using an

overly broad definition that sets positivism up as a straw-man, all further discussions in this text are based upon the following exposition.

Interpreted both as a set of methodological principles and operations, as well as an explanation of human action, the use of the term positivism in this study refers to the theoretical persuasion which essentially asserts that human action and social order are determined by unrestricted, universal laws (Halfpenny, 1982: p. 90). According to Jeffrey Alexander, there are four general postulates of the positivistic persuasion:

- o A radical break exists between empirical observations and nonempirical statements.
- o More general intellectual issues, i.e., philosophy or metaphysics, have no fundamental significance for the practice of an empirically oriented discipline.
- o An elimination of the nonempirical reference is taken to be the distinguishing feature of the natural sciences, any true sociology must assume a "scientific" self-consciousness.
- o In a science from which "philosophical" issues have been excluded and in which, correspondingly, empirical observation is thoroughly unproblematic, questions of a theoretical or general nature can correctly be dealt with only in relation to such empirical observation (Alexander, 1982: pp. 5-7).

One consistent feature found in such a positivistic worldview is the assumption that personal dispositions are simply reflections of external social and economic conditions. Freedom, volition, and intrinsic sources of reward are considered to be unscientific, metaphysical illusions. B.F. Skinner echoes this deterministic sentiment when he claims:

> That the person is unfree is an essential assumption for a scientific view... When we say that he is autonomous -- as far as a science of behavior is concerned, that means miraculous (Hampden-Turner, 1982: p. 32).

At one level, each hypothesis utilized in the study asserted that faculty work-related morale levels emanated from external and extrinsic sources of reward, e.g., actual or perceived monetary compensation for performance or influence over departmental policies. Of the three perspectives, however, the status discrepancy hypothesis allowed less possibility for effective human agency than the other two hypotheses. Since the status discrepancy hypothesis de-emphasized the role of subjective perceptions for determining job satisfaction levels, faculty members were portrayed as devoid of volition, merely adapting autonomically to external conditions. However, in the words of E. Gordon Ericksen:

> Our species is not a mere agent responding to the stimuli of geography, economics, diet, or machines. These "determinants" become significant only when embraced by the initiative of the conscious agent (Ericksen, 1980: p. 10).

Expectancy theory and perceived volition theory emphasized individual perceptions as the basis for understanding the distribution of faculty morale, thereby returning a degree of autonomy to the actor. These two hypotheses do not, however, deny that perceptions are highly influenced by environmental surroundings, thereby avoiding the drift into the ineffable realm of subjective idealism. Instead, these two hypotheses posit perceptions and self-determination as conditional probabilities, creating the potential for a more multidimensional theory of job satisfaction. A multidimensional theory of job satisfaction would necessarily have to

allow for the analytical inclusion of intrinsic rewards as potential explanantia of high faculty morale. Various types of intrinsic rewards accruing to faculty would include such factors as stimulating collegial relationships, acclaim from students and peers, feelings of scholarly productivity, self-actualization, and educational opportunities (Johnson and Kasten, 1983: p. 50).

Intrinsic rewards are inherently difficult to quantify or measure in a methodologically exact fashion, however. Due to their resistance to precise empirical measures, it is clear that any exclusively positivistic model attempting to explain faculty morale from a purely structural vantage point is likely to account for the influence of intrinsic factors in an ad hoc, residual fashion. In order to allow for the influence of intrinsic rewards, a theory must accept the potential for some degree of volition by acting subjects. On the other hand, if perceptions and consciousness are denied a priori, in the name of positivistic science, then intrinsic rewards are ostensibly rejected as a possible explanans. Therefore, in order to create more plausible explanations for job satisfaction it may be necessary to revise certain assumptions regarding strict epistemological and methodological adherence to the positivist persuasion.

As noted by Faia, several definitions of status inconsistency failed to address whether high status discrepants ever recognize the reward conflicts which they allegedly possess (Faia, 1985: p. 7; Hartman, 1982: p. 708). In fact, an entire sociological paradigm has historically centered around the tenuous notion that it is

unnecessary to study subjective perceptions in order to understand the effect of "social forces" on human action (Mayhew, 1980; Mayhew, 1981). For proponents of multidimensional theoretical logic, adherence to "objective" structures at the exclusion of "subjective" perceptions, constitutes a serious presuppositional omission (Alexander, 1982; Faia, 1988; Kreps, 1985). Unfortunately, omissions of this sort are common among sociologists who insist that "objective" structural analysis is the only level of analysis necessary to investigate, understand, and explain social phenomena. Even Marx and Durkheim, two of the founding fathers of sociology, exhibited these conceptual conflations at times.

During the next several pages a review is given of Marx and Durkheim's paradigmatic commitments to the analysis of social facts, often in isolation from the perceptual dimensions of human action. It is important to note at the outset that throughout their careers the writings of Durkheim and Marx exhibit more flexibility than they are given credit for in the following discussion. However, it is obvious that contemporary sociologists rely upon the founding fathers to represent certain strands of sociological thought, i.e., they are a convenient conceptual "short-hand" for more extensive epistemological, ideological, conceptual, and methdological issues. Therefore, to the extent that the epigonies stubbornly cling to their reified interpretations of Marxism or Durkheimianism, the subsequent critique accurately characterizes and criticizes several contemporary interpretations, (or misrepresentations), of Marx and Durkheim's work.

Certainly, Emile Durkheim's examination of the social determinants of regional suicide rates suffered from inadequate and unrealistic presuppositional commitments to the "social facts" paradigm. In fact, he premised his entire argument on the tremendous advancements social "science" could make by summarily discounting the necessity for studying the perceptual mediation involved in the nature of human action. His work is considered as a classic work of sociology since it was one of the first studies to use aggregate level statistical analyses when investigating social phenomena. In addition, his work is credited with recognizing the essential influence of collective representations as motives for social action. Analyzing social forces as structures sui generis, i.e., not directly reducible to personal dispositions, broke with the prevalent Enlightenment philosophy, with its hypostatization of the Individual. In contemporary sociology, this concept of analyzing social action as a system is no longer startling, having been institutionalized throughout much of social science.

Nevertheless, in light of more advanced analysis conducted by contemporary philosophers of science, Durkheim's work also exhibited some classic flaws of epistemology and theory as well (Alexander, 1983; Lukes, 1982). For example, it is unclear how any theorist could consistently claim to be a "positivistic structuralist", in the strict sense of the two terms. Positivism, as a derivative of the epistemological orientation known as empiricism, holds that only sense impressions and observable experiences may be classified as true knowledge. Structuralism, in the Durkheimian tradition,

postulates the causal determinacy of subjacent "social facts", and "social currents." By their very nature, these deep structures are not readily evident to direct empirical analysis, i.e., they must instead be posited as models that explain certain observable patterns. Thus, a literal interpretation of Durkheim's implicit presuppositions leads to a glaring contradiction between his epistemology, i.e., positivism, and his theoretical model, i.e., structuralism.

Furthermore, since Durkheim neglected the micro-level analysis of suicide in order to illustrate the importance of "social facts" on individual action, he has been justly accused of committing an "ecological fallacy." An ecological fallacy is committed when making an inference from a unit or aggregate level database and trying to generalize and correlate this information with individual level data (Babbie, 1983: p 191). Durkheim examined vital statistics on mortality rates, using geographical regions as the unit of analysis, but he then drew conclusions about the sociological causes of individual suicides. Even though statistical analyses revealed higher suicide rates occurring in Protestant regions, Durkheim's polemic commitment to a positivistic epistemology prevented him from conclusively proving that it was the Protestants, not the Catholics, who were taking their own lives. Furthermore, since a theoretical proposition can never be proven by statistics (only not rejected), other interpretations from the results are conceivable. For example, perhaps it was the Catholics, outnumbered in the Protestant communities, who were killing themselves. From this perspective,

therefore, suicide would not be a reflection of anomic "suicidogenic" currents as much as it would be a reaction to religious persecution. The purpose behind this polemic against Durkheim's errant conflation of structuralism and positivism is to clarify four key points:

- Bruce Mayhew notwithstanding, ignoring the subjective motives for action can result in greater obfuscation and imprecision, not less. Statistics representing "social facts" never "interpret" themselves; they require a context based upon implicit presuppositions.

- To the extent that researchers base their theories on non-reflective and conflationary commitments to contradictory presuppositions, i.e., structuralism plus positivism, they fail to provide adequate descriptions and explanations of social reality, at either the analytic or substantive levels of analysis.

- Social scientists who insist on examining "social facts", exclusive of their meaning for the actors involved, argue for a truncated version of an obsolete doctrine. Philosophers of science have never been able to justify any derivative form of positivism as the only "objective" scientific method, from either an epistemological or ontological level.

- Radical empiricistic attacks that deny the relevance of abstract knowledge achieve nothing more than self-referential statements which destroy themselves recursively. In otherwords, to claim that metaphysical statements are meaningless for "science", is itself a metaphysical claim, i.e., one that cannot be proved, or disproved empirically.

Summarizing all four points, it is clear that social scientists who argue for adherence to the "natural science model" ignore or misrepresent twentieth century advances in the philosophical foundations of natural science itself. In the words of Charles Hampden-Turner:

> Physicists, themselves the object of "scientific" emulation, were busy dismantling the Newtonian worldview. The field theories of electromagnatism with their invisible

> and irreducible wholes, the quantum revolution showing energy rather than mass at the sub-atomic level, and principles of complementarity and uncertainty made [positivists] look like petit bourgeois out of touch with their betters (Hampden-Turner, 1982: p. 33).

At a different level of analysis, these paradigmatic issues are also conceptually isomorphic with the Marxian problem involving the formation of revolutionary consciousness in the proletariat. For orthodox Marxists, the conditions required to bring about the socialist revolution are objectively determined and immutable, inherent in the historical contradictions of capitalism. However, theorists writing from the "economic" Marxist tradition have always had a difficult time producing convincing rationalizations for why advanced capitalist nations, i.e., the United States and Western Europe, have not yet succumbed to the "inevitable" collapse of their economic order. Concepts such as "false consciousness" and "surplus repression" are invoked in an attempt to explain why the lower classes, i.e., proletariat workers, in many countries do not seem to recognize the extent of their "exploitation", much less act in revolutionary ways. Changing economic conditions unforeseen by Marx, e.g., the rise of the middle class, the separation of corporate ownership from managerial control, or the relatively high standard of living in the advanced industrial countries, are all explanations used to rationalize the failure of Marxian prophecies concerning the demise of western capitalism. However, there is also a theoretical failure as well, due to a narrow-minded, epistemological imperialism that rejects the possibility for volitional human action.

From a multidimensional epistemological perspective, on the

other hand, it seems patently obvious that no revolution will occur until oppressed factions of capitalist countries recognize and perceive the extent of their domination by "bourgeois" property owners, or government agencies acting as "the executive directors for the bourgeois. Paradoxically, inadequate presuppositional commitments to "objectivism" and non-reflective materialism creates an inherent contradiction within Marxian analysis itself. Since orthodox interpretations of Marx's economic determinist stance denies human actors any volitional role, it is difficult to understand how "the people who have been the object of effective and productive domination by themselves create the conditions of freedom." (Marcuse, 1964: p. 47). In other words, since individual consciousness is rejected as a motive for thoughts and action, Marx's epigonies are caught in a dilemma. Conceptual gymnastics are necessary to explain how the proletariat transmorgrifies from an objective, but unaware, "class-in-itself", into the subjective, praxis engaged "class-for-itself." By denying conscious intervention by human actors, who are depicted as deluded chattel parroting the ideology of the ruling elite, "Gucci Bolsheviks" continue to preach upon eternal gloom while producing non-falsifiable reinterpretations of the master.

Returning to the analytic scope of the present study, these broader issues raise several important questions. Related to basic presuppositions about the nature of action and order, these issues can be expressed in two contrasting forms. First, if attitudes are shaped by exterior and anterior forces, e.g., status discrepancies,

salary levels, et cetera, then faculty perceptions are irrelevant, work-related morale dispositions become epiphenomenal, and job satisfaction levels are fully determined by economic forces beyond professorial control. Operating from a more multidimensional perspective, however, these objective economic conditions are not the sole, nor necessarily even the primary sources, of attitude formation. From this dialectical position, it is possible that professors may be able to derive their job satisfaction from intrinsic rewards, and alter their attitudes towards their work through perception management techniques. Whether or not a faculty member's job satisfaction at the University covaries directly with salary levels or status discrepancies becomes a conditional probability to be tested through empirical study, not resolved by definitional fiat. Due to the study's commitment to a multidimensional epistemological orientation, the second position was adopted, one that maintains the theoretical possibility for volitional action by faculty members. Therefore, professors' perceptions of the resource-allocation system were included to broaden the scope of the hypothesis. Consistent with the epistemological principles of complementarity, both meta-theoretical and empirical indicators were held constant during the data analysis of the second phase while collected data were processed and reviewed.

PHASE THREE: META-THEORETICAL CONSIDERATIONS

Philosophical Dualisms, and the Necessity for Multi-Level Epistemological Complementarity

General theoretic and epistemological issues constituted the research emphasis in phase three. Phase three addressed philosophical concerns pertaining to the necessity for consolidating diverse paradigmatic orientations. Due to the complexity involved by integrating the three phases, considerable effort was required to avoid conflating the various levels of analysis. Serious attention was also given to the resonation between the theoretical framework guiding the research, on one hand, and the conceptual modifications necessitated by empirical findings ensuing from the statistical analysis, on the other. Striking a balance between statistical analysis and theoretical interpretation became increasingly problematic as the study progressed. Theoretical lag occurred as subsequent interpretations of the regression output forced the recognition that certain initial hypotheses and presuppositions were inadequate to account for the resource-allocation dynamics operant at the University.

Similarly, special consideration was also given to prevent premature rejection or acceptance of either the status discrepancy hypothesis, the expectancy hypothesis, or the perceived volition hypothesis, as explanantia for faculty attitude-formation processes.

Non-reflective commitment to one-sided rationalistic and instrumental presuppositions, on the one hand, or fixation upon non-rational and affective presuppositions, on the other, represent equally lethal paradigmatic extremes. Adopting such an "either/or" stance at the general presupposition level potentially leads to the a priori eradication of entire areas of investigation.

Attention to meta-theoretical inquiry affirmed the interdependently interactive nature of all three phases. In the actual course of the research all three phases operated concurrently, not just sequentially. Theory informed research, and vice versa. Phase three was the most general, but by no means the most important, vis-a-vis the other two. Operating at a supra-empirical level of analysis, in phase three the necessity for multi-dimensional presuppositions on the nature of human action and the structure of social order was established. Jeffrey Alexander distinguished and defined these two perspectives in the preface to volume four of his work on Theoretical Logic in Sociology:

> Action can be defined either in an instrumental, rationalizing way or in a manner that pays more attention to nonrational, normative, or affective components. The former takes the materialist path, the latter the idealist, although there is also, of course, the possibility for a more integrated and synthetic, or multidimensional, position. Second, theory must also adopt an orientation to order. Are social arrangements the results of individual negotiation or do they present themselves as collective structures that have sui generis, or emergent, status? (Alexander, 1984: p. xix)

One of the major goals of the thesis study was to illustrate the various ways in which theoretical issues from one level of analysis could be instantiated with concerns at different level. A relevant

example of multi-level conceptual isomorphism centered around the latent dialectical tensions found in the three attitude-formation hypotheses. Explicit in these hypotheses was the assumption that a professor's perceptions, attitudes, and behaviors exist and crystallize within the matrix of his or her institutional surroundings. From this substantive level, faculty work-related morale dispositions hypothetically correspond with perceptions of existing and/or assumed structural resource/reward disparities within the University. Implicit in these three hypotheses was the dialectical tension between volition and condition. At this theoretical level, the extent to which professorial dispositions were affected by, or independent of, their social and economic circumstances raised intriguing philosophical questions.

Dialectical tensions among antipodal philosophical dualisms constitutes the prolegomena of theoretical logic (Alexander, 1982). However, dialectical tensions pertain to many levels of analysis, and are not limited to meta-theoretical concerns alone. As Alexander says, "Each level [of science] has relative autonomy vis-a-vis other kinds of scientific commitments, although each is powerfully interrelated to others at the same time" (Alexander, 1983: p. xviii). Within the context of the thesis, another appropriate example of multi-level dialectical tensions is related by Marx's materialist dictum that "men make their own history, but always under conditions which are given to them." At one level, this philosophical premise reveals Marx's appreciation for the dialectical vigilance required from both social actors and social observers to

effectively mediate between the contrasting elements of freedom and necessity in social existence. Furthermore, at the more concrete level of analysis required for the study of faculty morale at the University, the conceptual isomorphism between substantive issues and epistemological, ontogenic, and phylogenic tensions coincided with the theoretical foundations of the attitude-formation hypotheses.

A sophisticated awareness of how philosophical conundrums, e.g., freewill versus determinism, pluralism versus monism, among others, influence substantive research dimensions is essential to avoid reducing and conflating certain levels of analysis with one another. Perrucci elaborates on this point by claiming that:

> The incomes that faculty receive or their chances for promotion cannot be understood simply in terms of the personal resources they command and the performance records they develop. Income structures and promotion probabilities are also shaped by labor market conditions that are independent of personal resources and exert their own special influence on the careers of academics (Perrucci et al., 1983: p. 447)

Stated theoretically, Perrucci's admonition provides a powerful caveat against the paradigmatic position known as methodological individualism. Referred to by Bruce Mayhew as an ideological manifestation of western culture's "anthropocentric illusion" (Mayhew, 1980: p. 335), methodological individualism emphasizes "the characteristics of persons in occupations as the key to understanding differential experiences of success or failure in promotion or wage attainment" (Perrucci et al., 1983, p. 433).

In his quote on the multi-level determinants of faculty salaries, Perrucci implied that weighing the relative impact of personal productivity upon subsequent rewards required a careful

consideration of the material parameters defining the context of University resource-allocations. Perrucci's caveat against methodological individualism is a substantive reaffirmation of Marx's dictum, which reiterated the conditioned subjectivity of human action within a social order. From a theoretical point of view, to the extent that the materialistic premises of Marx's paradigmatic orientation are valid, attempting to comprehend resource-allocation dynamics through investigating personal merit alone would necessarily prove inadequate. Statistical investigation of University records confirmed Perrucci's structuralist interpretation of the resource distribution process in higher education. Regression analysis conducted in phase one conclusively demonstrated the paramount importance of structural factors, e.g., discipline affiliation or membership in the law or business schools, upon salary levels. It would have been a fallacy, therefore, to overemphasize the causal determinacy of individual performance levels on the structure of career salary levels. If applied as a potential paradigmatic prescription, methodological individualism's analytic and empirical inadequacy became evident once statistical findings demonstrated the degree to which ascriptive and structural elements significantly influenced resource-allocation policies.

Although substantive research demonstrated the failure of an individualistically-based paradigm to account for career salary disparities among University faculty members, one equally important meta-methodological question remained unresolved. While differences between status resource sets exhibited by faculty members constituted

measurable economic disparities, the extent to which these structural factors also affected faculty morale remained problematic. Empirical research demonstrated that the resource allocation system exhibited a high degree of determinism, represented by the 0.89 coefficient of determination corresponding to the University's generalized attribute-reward set. Despite this finding, it remained a conditional probability whether or not faculty attitudes towards their work were as structured and determined by institutionalized economic conditions as their career salaries were.

Once again, dialectical tensions between theoretical and substantive levels of analysis arose. While the relative autonomy or dependence between conditional and volitional factors was eventually resolved empirically, it was the complementary theoretical and meta-theoretical orientation that allowed both dimensions to be included in the analysis. Alexander summarizes the necessary unity and autonomy between and within the two levels.

> It is the particular empirical situation which decides the relative complementarity or antagonism of ideal and conditional phenomena; whether or not this empirical relationship can actually be expressed, however, is a theoretical question.

Dialectical tensions between the volitional and conditional dimensions of attitude-formation are addressed from a variety of perspectives throughout the investigation. In order to maintain theoretical and substantive multidimensionality, a delicate balance between individual and structural influence was preserved when weighting and testing reward levels and reported morale. While non-reflective adherence to individual reductionism is questionable,

adopting the other extreme, sociological reductionism, leads to alternative conundrums, e.g., the reified and static "over-socialized" concepts of man frequently manifested in the works of Marx, Durkheim, and Talcott Parsons. (Alexander, 1982-84; DiTomaso, 1982; Wrong, 1961).

Invoking the multidimensional paradigmatic approach necessary to distinguish the relative contribution of conditional and volitional phenomena surrounding the work experiences of University professors required an extremely subtle epistemological perspective. Inherent in such a multidimensional approach was the conviction that various philosophical dualisms should not be treated as mutually exclusive contraries at the analytical level. Instead, these contrasting positions were viewed as complementary epistemological perspectives, requiring a synergistic sublation at a higher level of analysis. More specifically, conceptual and philosophical issues were concretely instantiated into the present study. By operationalizing faculty morale hypotheses to include built-in counterfactuals, the study was able to account for various empirical outcomes in a formalized, non-residual manner.

Multidimensionality and an insistence on complementary levels of analysis were the common threads woven throughout the fabric of the thesis study. Strong emphasis was placed on the need to interpolate and instantiate the general philosophical concerns with the more concrete, empirical ones (Blalock, 1979; Kreps, 1985). Recognizing and realizing this synthetic objective required visualizing the difference between multidimensionality at the analytical level, on

the one hand, versus observational precision at the empirical level, on the other. Both perspectives were integrated by conceiving of the idealism - materialism dualism as operating at two distinct levels of logic: the theoretic and the substantive. At the presuppositional, or meta-theoretical level, both ideal and material perspectives were necessary to formalize a synthetic, mutually inclusive analytical paradigm. Presuppositional multidimensionality required that each polarity of various philosophical dualisms be regarded as one facet of two complementary interpretive perspectives. Analytically, therefore, idealism and materialism were considered equally valid as synergistic orientations to describe and explain the etiology of motivation, salary satisfaction and work-related morale.

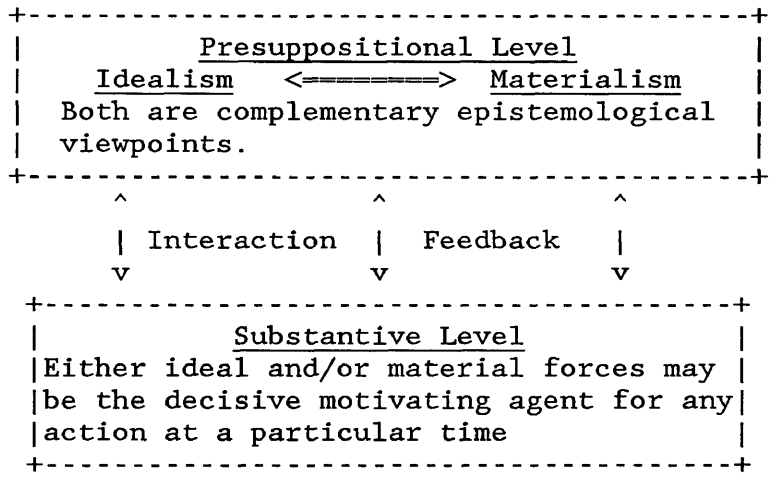
Substantively, however, it remained a contingent probability whether ideal or material factors predominated; since at any given institution, at any particular point in time, it is entirely possible that one or the other factor may be more decisive as a means to describe the relations and consequences of resource and reward processes. Therefore, the model utilized in the study of resource and reward discrepancies theoretically accounted for disparate empirical results, i.e., it supplied its own counterfactuals (Saunders, 1981; Wallace, 1984). Connecting the various levels of analysis in a cogent, non-conflationary manner yielded a robust analysis leading to insight on the structure and functioning of the resource and reward process at the University.

Obviously, an integral part of this study required effective communication of the interdependent relationships between phases one,

two, and three. Fitted together like a jig-saw puzzle, they constituted a modular and hierarchical model wherein each phase was semi-autonomous while contributing significantly to the functioning of the study as a whole. The phases were coordinated in a complex, but analytically coherent system. Figure 6 reinforces and clarifies the connections between the theoretical and substantive levels of analysis.

Figure 6

Connection Between Presuppositional Multidimensionality and Substantive Situations



At the substantive level, an additive and interactive model assumed that professors were capable of being motivated both by extrinsic, material rewards and/or by intrinsic, ideal ones. Analytically, each dimension was considered as an element requiring sublation into a complementary epistemological orientation.

Contemporary writings in the area of theoretic logic stress the decisive influence of general presuppositional commitments with regard to other components of the scientific method (Alexander, 1982;

Saunders, 1981; Ritzer, 1983; Wallace, 1983). Access to philosophical, theoretical, and methodological resources permitted testing many of the study's initial presuppositions. By a process of "recursive scrutinization" certain elements of the data were considered as ground while the relevant figure was submitted to critical analysis. For instance, once sufficient information was collected from computer-administered questionnaires (based upon prior commitments to a structuralist paradigm), the figure/ground relationships were reversed. This enabled the revision of previous general assumptions concerning the impact of the University's particular salary structure upon the faculty member's knowledge, attitudes and practices.

Absolute presuppositions in the study are not empirically verifiable (Alexander, 1982), and thus not amenable to experimental validation or rejection. Absolute presuppositions include certain fundamental metaphysical questions, e.g., "Is the underlying nature of the universe essentially material or ideal?", "Is the relationship between the world and the mind knowable through a priori or a posteriori means, or both?." Every theoretical statement referring to the structure, or non-structure, of social existence must take an implicit or explicit stand on these issues. Since they are inherently metaphysical issues, by definition these types of questions cannot be resolved through experiential methods, only by "the force of the better argument" (Habermas, 1973: p. xxiv). It was possible, however, to test relative presuppositions against the data collected from University archives. These relative

presuppositions included structuralism's paradigmatic notion that faculty dispositions reflect the distribution of underlying economic status discrepancies. Tests were conceived to operationalize this perspective in order to shed light on the substantive and analytic questions.

An unequivocable normative prescription was implicit in the advocacy for presuppositional multidimensionality as an epistemological orientation. For social science to progress beyond exposition and dogmatic ideology there must be cybernetic, symmetrical feedback between theoretically informed hypotheses and significant relationships revealed by statistical analysis. This suggests the need for analytical complementarity between deductive and inductive scientific methods (Wallace, 1971). In other words, an ideal situation would be one where theoretically-informed hypotheses generated a wealth of sociological data from empirical studies operating under the multidimensional epistemological rubric. Previous hypotheses would be reformulated, obsolete theories refuted, and new conceptual frameworks constructed that more accurately modeled and elucidated substantive findings. Although particular events occurring empirically at any given time may consist of unidimensional and conflicting factors, sociological theory must maintain an analytic order and coherence built upon mutually inclusive epistemological perspectives. Viewed synergistically, instead of reductively, this schema takes steps towards ameliorating many enervating and conflationary dualisms, e.g., idealism materialism, subjectivism - objectivism, and nominalism realism.

In the words of Talcott Parsons:

> Scientific truth is not an all or nothing proposition, it is a matter of successive approximations.

Parsons and Max Weber, among other philosophers of science, believed the "successive approximation" epistemology was the inexorable goal towards which both natural and social sciences moved asymptotically. Despite this dialectically harmonious vision of the inevitability of scientific progress, however, it remains unclear whether social sciences knowledge base actually increases in such a structured fashion (Alexander, 1982; Kuhn, 1962). In addition, while the cybernetic ideal of information transfer between deductive hypotheses and inductive experiments is plausible in theory, in practice problems arise when ad hoc and post hoc "theory bandaging" fabricates a vacuous, closed theoretical system. Often, those demanding the most rigorous application of the "scientific" method have limited experience with the actual application of their program (Wallace, 1971; Wallace, 1983). However, while non-falsifiability, caused by "slippery" definitions, is a serious concern, especially at meta-theoretical levels, the current study of resources allocation processes is sufficiently limited in scope to minimize most of its philosophical question begging.

The meta-theoretic innovation in the project consisted of its critical assessment of the potential influence and existence of deep structural conditions upon group and individual behavior and attitudes. In contrast to Marx, Durkheim, and related structuralists, who tended to <u>assume</u> the reality of external

structural forces, this study contained the methodological sophistication to treat these parameters as conditional probabilities, whose causal determinacy must be evaluated, and not merely assumed by definitional fiat. Subjecting the structural premises of the study to careful consideration, rather than accepting them a priori, reduced the chances of Type One and Type Two error, both statistically and theoretically. This technique required the reversal of figure and ground -- text and context -- alluded to above. Recognizing the necessity for holding the collected data constant allowed the prior assumptions of structural determinacy to be reexamined.

A review of the salary satisfaction literature illustrated the relevance of analytical and epistemological multidimensionality for other levels of scientific investigation. Many published studies of the factors influencing academicians' attitudes towards their work assumed an instrumental perspective on action and took an external, deterministic stance on order (Keaveny and Allen, 1983; Perrucci, 1983; Tuckman, 1977). Faculty job satisfaction was often regarded as a linear function of a professor's position within the stratificational hierarchy, i.e., those at the top were the most satisfied, those at the bottom the least. An underlying assumption maintained by many authors was that productivity and morale were determined by exterior and anterior forces, operating decisively and coercively on the individual.

The potentially deleterious effect of deficient presuppositions was exemplified in the general formula for expectancy theory

presented by Keaveny and Allen. In an article entitled "The Implications of an Across-The-Board Pay Increase", they hypothesized that occurrence = desirability + probability (Keaveny & Allen, 1983). In other words, the probability that a person will perform an action (e.g., engage in productive research in the future) was considered as a function of their mental calculus determining the pleasure and certainty of the outcome. Furthermore, they also theorized that feelings of undercompensation are associated with reductions in expected effort and performance. However, other equally plausible interpretations exist which derive from different premises. Keaveny and Allen's study suffered from presuppositional and epistemological deficiencies. Their propositions, which did not receive much support from the empirical data, were as weakened by an oversimplified instrumental perspective on social behavior as they were limited by their methodology, which consisted simply of faculty self-ratings on future productivity. One does not have to be a behaviorist to recognize the tenuous quality of even the "best laid plans of mice and men" for reliably predicting future action.

As mentioned above in the theoretical synopsis for phase two, objective or perceived salary undercompensation does not necessarily entail reduced productivity, a demoralized climate of "give up-itis", or an end to teaching effectiveness. Undercompensation can also be a motivating force, driving individuals to reduce status discrepancy by publishing more to gain greater recognition, thus making the Matthew Effect work for, rather than against them (Merton, 1968). This is not to say, however, that Keaveny and Allen were wrong, per se. In

their defense, they also list three hypotheses that explain "anomalies" i.e., cases where undercompensated faculty anticipate greater levels of effort and higher future levels of job performance than neutral or over-compensated professors (Keaveny and Allen, 1983: p. 21). These three hypotheses include:

- o The intrinsic satisfaction hypothesis
- o The non-tenure hypothesis
- o The reinforcement model

Central to the intrinsic satisfaction hypothesis was the idea that some faculty members may derive satisfying amounts of personal reward from attaining and sustaining high productivity levels. The non-tenure hypothesis suggested that those professors without the sinecure of lifetime career employment may perceive the surest avenue for obtaining tenure is through effort and performance. Finally, the reinforcement hypothesis argued that faculty work habits established early in academic training are "superior to other motivation models in accounting for day to day job performance" (Keaveny and Allen, 1983: p. 21). Since these behaviors may become internalized into a professor's work habits they would be highly resistant to change, even as a result of objective or perceived under-reward. Since both perspectives are theoretically plausible, the present discussion points to the need for multidimensional presuppositions that can analytically support and adequately explain counterfactual empirical findings without treating them as "anomalies", i.e., in an ad hoc, residual fashion. In addition to weakening predictive models, arbitrarily ruling out possible consequences merely because they do not "fit the paradigm" is a major impediment to increasing the

knowledge base of social science.

Mechanistic models of individual motivation, such as those implied by Keaveny and Allen, correspond with the classical utilitarian conception of man as a fully rational, self-interested actor. Taken as an ideal type, it is a satisfactory sensitizing principle for describing micro-processes from the perspective of an omniscient, purely rational individual. Taken as an ultimate calculus for determining all human social behavior, however, it becomes a truncated and reified version of a one-dimensional doctrine. Since utilitarian models of social action begin with the rational actor and then derive macro phenomena by aggregating preference schedules of individual social atoms, problems arise when translating between different levels of analysis. A logical liability is created when moving from the individual to the collective level within the rationalist tradition (Alexander, 1982: p. 101). Talcott Parsons termed this aporia the utilitarian dilemma:

> Rationalistic thought is caught in the "utilitarian dilemma." That is, either the active agency of the actor in the choice of ends is an independent factor in action, and the end element must be random; or the objectionable implication of the randomness of ends is denied, but their independence disappears and they are assimilated to the conditions of the situation, that is to elements analyzable in terms of nonsubjective categories... (Parsons, 1937: p. 64)

On one hand there is the presumption that the actor is an ambulatory cash-register, operating solely from enlightened self-interest. Analytically, this perspective ignores or underestimates the normative and conditional constraints on human action which give it

structure and stability. Paradoxically, on the other hand, there is also the assumption that a person's actions are nothing more than adaptations to external conditions.

John Locke, Adam Smith and other early utilitarians referred to rationalism's social ordering principle as "The invisible hand of the open market." Also known as "The natural identity of interests", it became an idealistic explanatory principle developed to eliminate the logical problems inherent in explaining how social order was possible in a world comprised of hedonistic individualists. In order to prevent a collapse into the Hobbesian nightmare, "the war of all against all", some sociological mechanism was necessary to preserve social integration in the face of unbridled capitalism, aided and abetted by the disintegration of moral and religious orders. Unfortunately, the solution adopted by methodological individualists, i.e., the utilitarians and rationalists, resulted in the undermining of their most cherished principle: individual volition to choose freely in an open market. This logical aporia consequently sacrificed freewill on the altar of determination by natural organizational laws: heredity, equilibrium, biotic forces, or the invisible hand. This leads to a truncated perspective on human agency for two reasons:

- o The problem of action is conflated into the problem of order.
- o Description is collapsed with explanation.

Theoretical conflation refers to a confusion between, or improper fusion of, two distinct and autonomous levels of analysis.

In the present context, rationalistic analyses of social, supra-individual phenomena have resolved the utilitarian dilemma by denying the "randomness of ends." Conceptually, therefore, human action becomes an instrumental given, thereby assigning the prime mover of social systems to external economic, legal, or normative structures. Once again, the potential for individual volition becomes subordinated to institutional dynamics.

Collapsing description with explanation, the second problem exhibited by theorists operating from the rationalistic persuasion, is the conceptual cousin to the conflation of action and order. As Alexander recognized, describing or defining human nature as solely instrumental, purely self-interested, and hedonistically adaptive to external circumstances, actually disguises a crypto-explanation, by presupposing what it means to be a human being. A conceptual synonym for this logical error is known as the synedochal fallacy, which occurs when a universal principle is over-generalized from the actions or qualities of a particular incident. Strictly speaking, therefore, from the rationalistic persuasion, social action becomes instrumental by definitional fiat, not necessarily by the nature of the object of analysis. In other words, the rationalistic search for unrestricted universal social laws concludes by theoretically negating non-instrumental action (Halfpenny, 1982). Therefore, the potential for volitionary behavior by an active subject is rejected in the name of an existentially untenable and epistemologically static objectivism.

In contrast, the epistemological orientation in the present

study attempted to integrate, rather than separate, the objective and subjective modalities of social analysis. Multidimensional reasoning has the advantage of measuring and researching both subjective perceptions and reported motivational levels, on one hand, and then comparing them against the distribution of objective structural inequities and actual performance levels, on the other. Because of their global impact on other dimensions of social research, the meta-theoretical questions subsume the more specific concerns with structural models and their impact upon behaviors and attitudes found among individuals and collectivities. Treatment of these issues transcended the specific focus on the structure and functioning of reward processes at the University. Once again, it was possible to reconsider general presuppositional commitments while at the same time holding constant collected data and research findings.

FINDINGS: PHASE ONE

In order to create an empirical foundation for testing the attitude formation hypotheses it became necessary to identify the variable components of the resource-allocation system at the University. Six data sources yielded information used to construct a faculty database for all currently active professors at the University:

- Five-year (1981-1985) archival records obtained from the master personnel file at the University.
- Six-year (1980-1985) list of federal, state, local, and private grant recipients.
- Five-year (1981-1985) list of faculty publications, including journal articles and books published.
- Six-year (1980-1985) list of elected and appointed committees served on by faculty members, plus chairpersons of all major committees in the Arts and Sciences.
- Sixteen-year (1970-1985) list of department chairpersons in Arts and Sciences, and former deans of the business, education, and law schools.
- Seventeen-year (1968-1984) list of Alumni Award recipients given for superior teaching at the University.

Statistical operations using SPSSX multivariate regression procedures generated twelve dichotomous, ordinal, and interval level variables significantly related with the 1985 salary distribution for all academic departments and professional schools at the University. Methodologically, the goal of phase one was to experiment with the

collected information in order to delineate the determinants of faculty salaries. By creating composite variables with the raw data and running regression analyses, a prediction equation was formulated which appeared both statistically significant and theoretically plausible. An implicit assumption of the analysis held that the final regression equation defined the parameters and dynamics of a social structure, i.e., patterns of resource allocations at the University. Theoretically, therefore, the generalized attribute-reward set potentially formed an influential milieu within which the faculty members engaged in interaction and formed their attitudes and behaviors towards their work. Descriptive statistics for all significant variables in the final equation are adapted from SPSSX regression output and listed below:

Figure 7

Descriptive Statistics for all Significant Variables in The Regression Run

LABEL	MEAN	STD DEV	IDENTIFICATION
SALARY85	36145.000	8566.08	The 1985 mean salary for the faculty
ROOT_SAL	188.810	22.259	The square root of 1985 mean salary
BASE_12	.043	.204	Dummy variable for a 12 month contract
LAW_PROF	.052	.222	Dummy variable for law professors
BUS_PROF	.092	.290	Dummy variable for business professors
X_ADMIN	.133	.340	Dummy variable for former department chairpersons or former professional school or Arts and Science Dean
COMPPROF	.035	.185	Dummy variable for computer science professor
RANK86	3.255	.904	1985 rank of professor
CURCHAIR	.060	.237	Dummy variable for current department chairman
HOT_DEPT	.174	.380	Dummy variable for history, education, and economics
TOTGRANT	.530	1.555	Total number of federal, state, and private grants received in the past

			five years
LOG_ART	.718	.826	Logarithm of total number of articles published during the past 3 years
SERV_YRS	23.459	13.477	An index comprised of number of years since terminal degree plus number of years in rank
UNI_YRS	13.978	8.673	Total number of years at the current institution

All together, these twelve variables accounted for greater than eighty-nine percent of the total career salary variance. In this section the results from the statistical analyses are reported and interpreted. Figure 8 summarizes the regression findings with the square root of 1985 salary used as the dependent variable:

Figure 8

Components of the University's Reward Structure:
Generalized Attribute-Reward Set

Multiple R	.94571		
R Square	.89437	R Square Change	.00533
Adjusted R Square	.89080	F Change	17.90377
Standard Error	7.35561	Signif F Change	.0000

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	12	162633.65766	13552.80480
Residual	355	19207.28686	54.10503

F = 250.49065 Signif F = .0000

Variables in the Equation

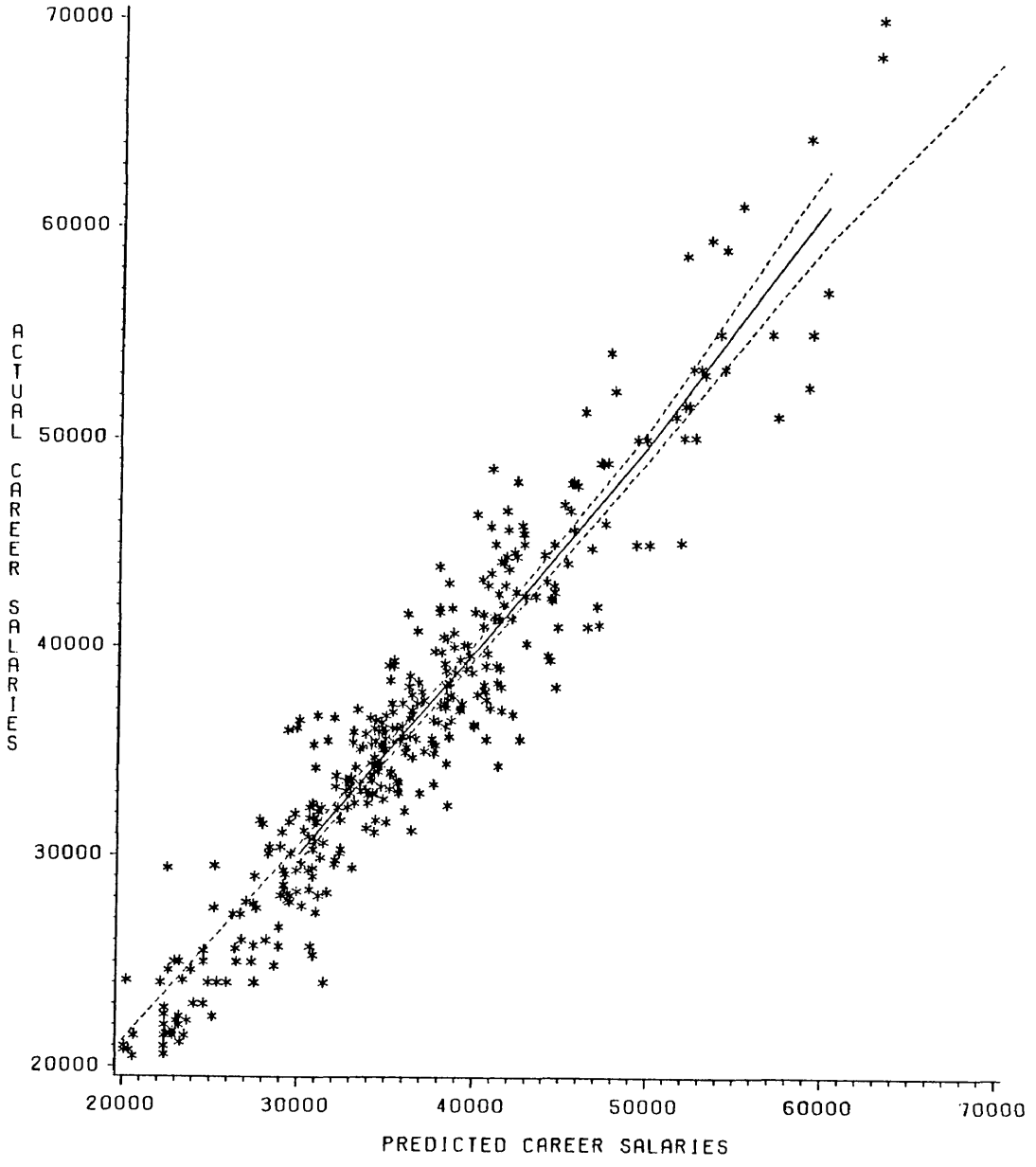
Variable	B	SE B	Beta	T	Sig T
LAW_PROF	50.516262	1.893869	.502864	26.674	.0000
RANK86	10.781456	.640380	.439721	16.836	.0000
SERV_YRS	.714865	.066497	.432821	10.750	.0000
BUS_PROF	31.324962	1.426501	.408069	21.959	.0000
UNI_YEARS	-.450967	.106579	-.175705	-4.231	.0000
COMPPROF	19.656073	2.164542	.163235	9.081	.0000
BASE_12	14.688091	1.998730	.134749	7.349	.0000
LOG_ART	3.551788	.530466	.131870	6.696	.0000
CURCHAIR	11.601407	1.650505	.123734	7.029	.0000
X_ADMIN	7.530785	1.268515	.115097	5.937	.0000
HOT_DEPT	6.120029	1.061241	.104354	5.767	.0000
TOTGRANT	1.370808	.288582	.095776	4.750	.0000
(Constant)	130.348446	1.538759		84.710	.0000

As mentioned previously, the regression model based upon the statistical analysis symbolized the generalized attribute-reward set, consisting of individual and structural variables distinctively related to predicting the 1985 faculty salary distribution. The instantiation of a particular professor's relationship to the general resource-allocation system operant at the University was quantified by the magnitude, degree, and signed direction of the individual residuals. Figure 9 is a plot of the relationship between actual faculty salaries and the dollar amounts predicted by the twelve

significant variables in the regression equation:

Figure 9

Plot of Expected Versus Observed Salaries



Standardized beta coefficients were computed to designate the relative amount of variance in the dependent variable (ROOT_SAL) accounted for by each independent variable, with all other factors held constant. While the standardized beta weights were used for

inter-variable comparisons, the unstandardized regression scores, i.e., the B coefficients, were more useful for determining the relative impact of certain factors on 1985 career salary levels.

All unstandardized regression coefficients are reported in square root form. A statistical transformation of the dependent variable was implemented to correct for positive skewness in the 1985 salary distribution. Arithmetic transformations are often utilized in order to normalize the distribution of either dependent or independent variables by smoothing out highly positive or highly negative cases. Square root conversions were chosen over the logarithmic method after examining descriptive statistics for each potential dependent variable. Reviewing the histogram output and skewness statistic for all three tranformations demonstrated the undesirability of applying the logarithm of 1985 salaries. Taking the logarithm actually over-compensated for positive skewness by creating a negatively skewed distribution. Figure 10 displays the degree of skewness for the three dependent variable distributions:

Figure 10

Degree of Skewness for Each
Dependent Variable Distribution

Variable	Skewness	Description of the Variable
SALARY85	.660	1985 Salary of Professor
ROOT_SAL	.261	The square root of 1985 salary
LOG_SAL	-.109	The logarithm of 1985 salary

Since it is difficult to interpret the unstandardized B coefficients

when they are reported in square root form, Figure 11 presents the square root B coefficients transposed back into dollar amounts. The numbers shown represent the average monetary effect (in dollars) corresponding with a change of one unit of measure in a particular independent variable. The reported figures are only approximations, actual dollar increases would depend on which of the independent variables were altered. Immediately following Figure 11 is an interpretation of the regression findings.

Figure 11

Dollar Amount Increase in the Dependent Variable Corresponding with a One Unit Increase in the Independent Variable

Independent	Dollar	Independent	Dollar
LAW_PROF	$21,627	COMPPROF	$ 7,809
RANK86	$ 4,188	BASE_12	$ 5,762
SERV_YRS	$ 270	X_ADMIN	$ 2,900
BUS_PROF	$12,810	CURCHAIR	$ 4,516
UNI_YRS	$(-)170	HOT_DEPT	$ 2,349
TOTGRANT	$ 519	LOG_ART	$ 1,278
Constant	$16,991		

The following discussion is based upon statistical output from the regression analysis. It contains an interpretation of the significant variables in the equation and a summary of the relevant findings from phase one. Standardized regression coefficients (beta weights) are reported and interpreted as an indicator of the relative importance of variables in predicting and influencing the salary distribution. Unstandardized B coefficients are reported in the transformed (square root) dollar format. They indicate the magnitude and signed direction of dollar changes corresponding to different

intra-variable values for the twelve elements in the generalized attribute-reward set.

INTERPRETATION OF THE REGRESSION OUTPUT

The final equation used to predict the 1985 salary distribution (with B coefficients retranslated into raw dollar terms) was formulated as follows:

Salary [x] = 16,787 + 21,437(LAW_PROF) + 4,175(RANK86) +
273(SERV_YRS) + 12,551(BUS_PROF) + -199(UNI_YRS) +
8,353(P_INDEX) + 7,760(COMPPROF) + 5,991(BASE_12) +
2,877(X_ADMIN) + 4,089(CURCHAIR) + 2,068(HOT_DEPT)

When treated statistically as a contextual unit, professors in certain fields received substantially higher salaries than predicted with merit, seniority, and rank scores held constant. Discussed further below in the regression interpretation, this phenomenon was most notable in computer science, education, history, economics, and the law and business schools. These structured disparities indicate a mixture of achievement and market factors influencing salary levels on the basis of academic field. Several indicator, or "dummy", variables (coded 0 and 1) were created as measures to test the hypothesis that market factors increased the salaries of professors in highly rewarded fields independently above and beyond rank, seniority, research productivity level or teaching ability. Four statistically significant indicator variables included:

- LAW_PROF - An indicator or dummy variable, where unity

stands for being a professor in the law school
- o BUS_PROF - A second dummy variable, where unity indicates the professor is a member of the business school
- o HOT_DEPT - A dummy variable for being a professor of economics, education, or history
- o COMPPROF - A dummy variable; unity indicates the professor is a member of the computer science department

Law and business school professors (LAW_PROF: Beta=.49 & BUS_PROF: Beta=.40) are paid substantially higher salaries than faculty in the Arts and Sciences, with other independent variables held constant. Other factors held equal, a law professor can expect to receive $21,437 dollars over and above the $36,145 expected mean of the faculty population. Business professors received an average of $12,551 dollars above the University mean. In addition to receiving higher salaries, professors of law and business also receive higher average yearly percentage raises, thus widening the income disparity. Diachronic analysis of pay increases revealed that the law and business schools experienced average raises of over 13% percent per year since 1980 (14% and 12% respectively). These jumps were significantly larger than those received by the arts and sciences and Education, where salary increments have increased at a general rate of only 8% per year. Recently, the percentage increases to both business and law have grown after the state assembly voted to provide an extra stipend to faculty members in these two professional schools. According to the University's administration, the rationale behind the salary stipends was to enable the business and law schools at the University to attract qualified faculty, thus remaining competitive with other professional schools in the University's benchmark cohort.

Net of all other factors, faculty members teaching in computer science (COMPPROF: Beta=.16), history, education, and economics departments (HOT_DEPT: Beta=.13) received additional income when treated statistically as two aggregate indicator or "dummy" variables. Education, economics, and history were grouped together to form one variable as a data-reduction technique. After preliminary statistical tests revealed the standardized beta weights were approximately equivalent when each department was entered separately into the equation, all three departments were integrated into one composite indicator variable. Combining the three fields into one measure helped to maintain a statistically favorable ratio of independent variables compared to the sample size (Kerlinger & Pedhazur, 1973). Computer science professors, in contrast with those in history, economics, and the school of education, received significantly greater rewards than faculty members in the other three departments; therefore, the aggregate salary increase accruing to these professors was captured by creating a separate dummy variable selecting for computer faculty only. On the average, being a computer professor was worth an extra $7,760 dollars, while teaching in education, economics, or history was worth around $2,068.

Several factors may account for the higher monetary rewards given to professors teaching in these four fields:

- Faculty members with degrees in high technology fields like computer science currently benefit from high market demands for professors with such skills. At the University, doctoral recipients in computer science profit from a favorable supply/demand ratio for amount of positions available compared with the number of qualified degree holders. The Dean of

Arts and Sciences reported an example that illustrated the effect of differential market conditions in various academic fields. He revealed that a recent job opening in computer science brought forth only three respondents applying for the position, whereas two tenure track vacancies in the English Department, on the other hand, yielded seven-hundred and forty applicants for the openings.

- o Generally considered to be one of the top departments in the social science area, history is also one of four doctoral programs at the University (the others include clinical psychology, physics, and computer science). Apparently it costs more money to attract qualified professors capable of teaching graduate students at the doctorate level.

- o Although it is not nearly as highly rewarded as the law or business schools, the education department is still a professional school. Perhaps education professors have greater access to lucrative outside career opportunities, e.g., administrators at public high schools. This may allow them to bargain for higher income adjustments during salary reevaluation periods.

- o Full-time teaching equivalents (FTE) ratings reported in literature received from the University's Department of Institutional Research, indicated that high student enrollments in economics courses created greater than average teaching workloads for professors teaching in that area. Viewed as an example of the effects of differential market demands for certain socially valued skills, the popularity of the "dismal science" may work to the advantage of economics professors when bargaining for budget increases. Over the past several years, the economics department had the largest number of undergraduate majors in the social sciences, with 125 current degrees conferred in 1985. In comparison, government was second with 100, psychology and sociology had 57 and 22, respectively, during the same time period.

All four dummy variables representing the highly rewarded fields were significant in capturing residual variance not completely accounted for by the merit, rank and length of service measures. Judging from the beta coefficients, however, the relative impact of the law and business indicator variables on predicting the salary variance was slightly more than three times as influential as was teaching in the

computer science, economics, education, or history department. This finding supports the contention that favorable market conditions interact with political influence to strongly determine the variation of career salary distributions.

Having an administrative position, e.g., department chairperson (CURCHAIR: Beta=.11) added significantly to a faculty member's salary. Current chairpersons at the University received an additional stipend that varies by department; holding a chairpersonship in 1985 translated into an average salary increment of $4,089. Furthermore, being a previous chairperson or Dean of a professional school generally appeared to have long term benefits for one's future career salary level. An independent variable that recorded all former chairmen and deans from the preceding fifteen years was significant and worth around $2,877, (X_ADMIN: Beta=.11). Several sources revealed that before the present policy of rotating chairpersons and three year service terms, departmental heads were not formally obligated to disclose the nature of their decision-making processes to other colleagues in their departments. This non-accountability also applied to the dispersal of yearly salary adjustments; common "knowledge" at the University maintained that, in the past, department heads rewarded themselves handsomely at salary reevaluation time.

One of the more enigmatic factors related to higher career salary levels was the dummy variable for receiving a twelve month salary contract, (BASE12: Beta=.13). Interpreting the significance of the twelve month salary contract remains problematic. Apparently

it was not standard University practice to grant professors twelve month appointments instead of the standard nine month contract. According to the Dean of Arts and Sciences, however, twelve month contracts are used as perks, in part of a recruiting package offered to entice highly valued faculty to come to the institution. Receiving a twelve month salary entails definite monetary and academic advantages. Unlike professors with nine month contracts, the full-year faculty do not have to compete for summer grants, teach during summer school, or take second jobs during the summer vacation when they are not being paid by the University. One explanation for the variable's significance may be a consequence of the high number of physics professors in the sample who receive twelve month salaries. In other words, the variable may serve as a proxy for being a physics professor. About one-half of the sixteen current professors with twelve month contracts teach and conduct research for the physics department, presently regarded as one of the most powerful and well funded fields in Arts and Sciences. Although a specific dummy variable created for physics professors failed to remain in the equation, perhaps this occurred since most of its variance was already being accounted for by the twelve month salary measure. Having a twelve month contract added $5,991 dollars to the professors' salary level, when compared to faculty with nine month appointments.

Two statistical operations testing for salary discrimination on the basis of sex failed to reject the null hypothesis of no relation. A gender variable coded 0 for men and 1 for women never reached the

level of significance necessary to be included in the analysis. Testing for the effects of sexual discrimination on faculty salaries appeared as a common theme throughout the merit and reward literature. In fact, many studies have found that a professor's gender is a significant factor in accounting for differential reward levels among faculty members (Bayer & Autin, 1968; Reagan & Maynard, 1974; LaSorte, 1971; Suter & Herman, 1973). However, in the present study it appeared that the University's affirmative action programs over the last decade have been successful in eliminating the effects of salary discrimination by sex. Further attention is addressed to this issue below.

An index measuring years of service to the University had a large positive impact on 1985 salary (SERV_YRS: Beta=.43). This index was created by summing up the number of years elapsed since each professor received his or her highest academic degree and then adding the number of years spent in their current rank to the first score. Each yearly increase of the service index added $273 dollars to the professor's salary. Interestingly, there was a countervailing tendency existing between the total years of seniority in academe versus the number of years serving at the present University. While the total number of years since receiving a terminal degree had a high positive relationship to salary, being a professor at the University for a long period was negatively related to salary (UNI_YRS: Beta=(-).20), all other independent variables held constant. Each additional year at the University subtracted $199 dollars from the professor's predicted salary. Such a

counter-intuitive finding might be interpreted as an example of "fixture syndrome."

Fixture syndrome may occur when professors regarded as permanent members of the academic institution no longer receive salary increases equivalent to those allocated to younger, or more career mobile colleagues. Perhaps administrators and personnel committees consistently under-reward senior professors, basing their decisions on the collective belief that faculty "fixtures" are financially, socially, and professionally committed to remaining at the University regardless of yearly salary increases. For instance, even if under-rewarded faculty are dissatisfied with their salary adjustments, older professors with emotional and economic investments in the University or in the community may be unable or unwilling to search competitively for another position elsewhere.

Neither the archival data nor the survey questionnaires investigated this question in depth. It is only possible, therefore, to speculate about the reasons why professors with more years of service to the University seem to be penalized as their seniority increases. In addition to the "fixture syndrome" conjecture, another interpretation was suggested by the Dean of Arts and Sciences. He asserted that a negative relation between salary and length of appointment time at the University existed because younger faculty members hired in recent years have exhibited higher levels of research performance than older faculty. His proposition was not supported empirically since the productivity factor was held constant during the statistical analysis.

Most empirical studies focusing on the determinants of faculty salaries distinguish among three dimensions of professorial merit: teaching, research, and service (Faia, 1985; Fox, 1981; Gordon et al., 1974; Johnson & Kasten, 1983; Katz, 1973; Marshall & Perrucci, 1982; Perrucci et al., 1983; Tuckman, 1977). Information provided by University archives was used to operationalize these three elements of meritorious performance. Variables used as independent variables in the analysis included:

- o TCHAWARD — A dummy variable indicating the receipt of a University teaching award.
- o NCOMTOT — Number of total committees served on over the past five years.
- o NELECTOT — Number of elected committees served on over the past five years.
- o LOG_ART — The logarithm of total number of journal articles published over the last four years.
- o TOTGRANT — The total number of federal, state, and private grants received over the past five years.
- o BOOK_PUB — A dummy variable indicating the publication of a book over the past ten years.

Preliminary statistical investigation demonstrated that externally oriented research productivity, e.g., number of articles published and total grants received, were the two performance variables most significantly related to 1985 salary. In comparison, internally oriented performance variables, e.g., teaching and elected or appointed committee service, were not highly related to salary distributions. Interestingly, another facet of externally oriented research, book publications, had only a very sight positive relationship to increased salary levels. Interestingly, the two significant productivity measures corroborated the findings from similar investigations on the determinants of resource allocation in

higher education (Faia, 1985; Fox, 1981; Johnson & Kasten, 1983; Gordon et al., 1974; Katz, 1973; Keaveny & Allen, 1983; Marshall & Perrucci, 1982; Marsh & Dillon, 1980; Perrucci et al., 1983; Tuckman, 1977). These other studies also concluded that faculty research productivity generates higher levels of monetary reward that measures of teaching ability or service to the University. Beta weight scores and T statistics for articles published and grants received provided support to the conclusions drawn from other research (LOG_ART: Beta=.13, and TOTGRANT: Beta=.09).

When compared to any of the other four merit measures considered separately, statistical tests illustrated the greater significance of the research variables, LOG_ART and TOTGRANT, for predicting salary variance. One explanation for this phenomenon held that scholarly productivity at the University was defined in terms of easily quantified indicators. Higher rewards may accrue to faculty performance contributions with a strong research and publishing emphasis due to the visibility of these activities. In contrast to teaching, which is often difficult to judge objectively, publication counts of journal articles, or grants received from funding agencies provide relatively unambiguous measures of "performance." This interpretation was strengthened by the fact that most other studies of the determinants of faculty salaries reached similar conclusions (Fox, 1981; Johnson & Kasten, 1983; Gordon et. al., 1974; Katz, 1973; Keaveny & Allen, 1983; Marshall & Perrucci, 1982; Marsh & Dillon, 1980; Perrucci et al., 1983; Tuckman, 1977). The logarithm of total articles published was used due to a significant

non-linearity in the correlation between the square root transformation of 1985 career faculty salaries and the sum of all articles published since 1980. One plausible explanation for this curvilinearity contends that an income ceiling limits the amount of increased reward given for high levels of research publication, i.e., above a certain point, very large annual rates of publication receive little additional monetary recognition. Higher beta weights exhibited by the logarithm transformation over the original article distribution supported the premise that a point of diminishing returns exists for prodigious amounts of articles published.

The final independent variable exerting a powerful impact on 1985 salary levels was the current rank of the professor. Second in importance only to the indicator variable representing the law professors, the rank variable was the most powerful predictor of 1985 salaries, (RANK86: Beta=.43). For statistical purposes faculty rank at the University was divided into five categories:

Rank	Number of professors in rank
o Lecturer or instructor	13
o Assistant professor	62
o Associate professor	125
o Full professor	153
o Eminent scholar	15

Although these were technically nominal categories, there was a strong ordinal quality to the reward levels received for different professorial ranks. Regression analysis reported a $4,175 dollar increase in salary corresponding to each increment in rank. However, analysis of variance tests indicated a significant non-linearity existed between the eminent scholars and the other four categories.

Eminent scholars were professors holding a "funded chair" at the University. All private endowment dollars supporting the chair were equally matched by state money. Although the actual allocation procedures vary from case to case, in many instances about half of the money accrued to the designated eminent scholar, with the remaining funds distributed to other faculty members within his or her department. There are currently only fifteen eminent scholars teaching at the University. All faculty members are eligible to take part in the program, however, regardless of present rank. Eminent scholars average about $51,000 dollars in annual salary for 1985, significantly above the $40,000 dollar amount received by full professors without the added benefit of endowed chairs.

A standard method for handling non-linear relationships is to decompose the independent variable into several dummy variables, e.g., one for associate professor, one for full professor, et cetera. In the interest of statistical parsimony, however, individual dummy variables were not created to capture the non-linearity between the average salary levels for full professors and eminent scholars. Figure 12 illustrates the average 1985 salary received by professors with various ranks. It is interesting to note that the large jump of over $10,000 dollars from full professor to eminent scholar significantly exceeds the dollar increments between the 4 other rank positions, which were closer to $6-7,000 dollars per step.

Figure 12

Breakdown of 1985 Salary
by Rank of Professor

Rank category	Mean	Std Dev	Cases
1985 Average Faculty Salary	$36,145.00	$8,566.0869	368
Lecturer or Instructor	$23,892.30	$3,536.1140	13
Assistant Professor	$27,908.59	$6,273.7827	62
Associate Professor	$33,884.27	$4,940.1699	125
Full Professor	$40,909.75	$6,541.3927	153
Eminent Scholar	$51,046.80	$9,439.0191	15

TOTAL CASES = 368

Achieving a theoretical understanding of why certain variables were significantly related to the career salary distributions was crucial for explaining the resource-allocation system at the University. It is equally intriguing, however, to conjecture about why certain intuitively valid variables failed to meet the alpha levels necessary for inclusion into the equation. Furthermore, many of the rejected variables attained significant correlations with faculty salaries in other research literature on resource-allocation structures in academe, (Katz, 1973; Marshall & Perrucci, 1982; Tuckman, 1977; Perrucci, 1983).

Figure 13 shows a list of all variables included throughout the regression runs that failed to meet the probability-to-enter criteria, and were therefore excluded from the final equation. A brief description of each variable identifies and matches it with the research dimension it captured.

Figure 13

Variables Used in the Study
Not Achieving Statistical Significance

Research Dimension	Variables Used
o Dummy for having tenure	TENURED
o Student evaluation of teaching ability	EVALUATE
o Teaching award given for superior classroom ability	TCHAWARD
o Logarithm of total articles published, 1980-85	LOGART
o Dummy for publishing a book within the last 10 years	BOOK_PUB
o Total grants received from federal, state, and private sources, 1980-85	TOTGRANT
o Dummy for head of elected committee, 1980-85	HDELEC84
o Number of total committees served on, 1980-85	NCOMTOT
o Number of elected committees served on, 1980-85	NELECTOT
o Dummy for external service, 1981-84	OUTSERVE
o Dummy for PhD from top-ten degree granting institution	COLLEGE
o Dummy for sex	GENDER
o Dummy for ethnic background	RACE
o Dummy for doctorate	PHD

Several conceptually plausible variables not found to be statistically relevant when entered separately into the equation included teaching, committee service and book publications. According to the Dean of Arts and Sciences, most departments at the University stress teaching and research about twice as heavily as service to the institution when calculating the departmental merit ratings at salary evaluation time. Interestingly, the archival data indicated no support for the belief that higher levels of teaching are rewarded by departments. However, it was not clear from either the interview or the data to what extent this practice existed historically at the institution. In addition, the Dean also claimed

that committee service to the University was considered more as a job responsibility, rather than a variably rewarded productivity factor, per se.

One of data sources used to operationalize the "quality of instruction" performance dimension was the teaching award dummy variable. Referred to as TCHAWARD, this indicator variable was a record of Alumni Awards given to outstanding professors each year in recognition of their superior teaching ability. However, neither this measure, nor a variable constructed from 1978 Student Association Faculty Evaluation Report (a campus wide student survey of faculty ability in the class room) was analytically sensitive or statistically powerful enough to be of much use in building a predictive model of resource allocations at the University. A number of related studies of university merit and reward processes reported similar difficulties producing an suitable indicator for teaching proficiency (Johnson & Kasten, 1983; Katz, 1973; Tuckman, 1977).

It is possible that much of the difficulty in capturing classroom instructional proficiency results from the nature of the concept being investigated, rather than the methods utilized. Quantitative measures of teaching merit derived from secondary sources may not be subtle enough to adequately capture differential teaching abilities. Perhaps because of its relatively subjective nature teaching quality was difficult to quantify in the first place.

Another component of merit that failed to be significant when entered into the regression as a separate variable was internally oriented service to the University, i.e., elected and appointed

committee membership. External service, however, such as chairing a professional association committee, or being an officer in scholarly societies or editorships, was unrelated to either increases or decreases in salary levels. As it turned out, the only statistically significant merit variables were those operationalizing articles published and grants received.

Several studies reported that receipt of a doctorate from top universities was related to increased salary levels (Katz, 1973; Marshall & Perrucci, 1983; Perrucci, 1982; Tuckman, 1977). In order to test this hypothesis a dummy variable was created to indicate professors who graduated from the top 15 doctoral degree granting institutes in each field. University rankings were taken from the 1985 Gourman Report; however, the variable did not attain statistical significance. This finding suggests four interpretations:

- Being a graduate student from a top university may assist in getting new PhDs a job in academe. Once they become members of the faculty, however, they may be rewarded according to other criteria, such as productivity levels, or department affiliation.

- Perhaps the present University does not attract the best doctoral recipients from the top universities. Therefore, graduates from highly ranked institutions would not be likely to receive any higher salary levels than regular faculty from less prestigious universities.

- Annually published departmental rating schemes that rank the top 50 graduate programs in each field e.g., the Gourman Report, or the Cartter Report, may not be generalizable backwards over the previous several decades. In other words, the rank ordering positions and even the universities included in a list of the top graduate institutions

from in the 1950's and 1960's may no longer be valid for the current stratification of departments in higher education.

- Finally, the benefits of receiving a degree from a top university may be captured in other performance variables, such as getting grants or publishing heavily in academic journals.

Finally, having achieved the sinecure of life-time employment, i.e., tenure, was not related to increased career salary levels. The reason for this finding had more to do with the nature of regression analysis than with University resource-allocation policies. It appeared that several other significant variables in the equation, e.g., faculty rank and years of service tended to be highly correlated to receipt of tenure. Therefore, these other variables picked up the variance conceptually related to tenure, causing the indicator variable TENURED to be eliminated from the equation due to the effect of multicollinearity.

SUMMARY DISCUSSION FOR PHASE ONE

A number of conclusions regarding the determinants of the 1985 career salary distribution arise from the interpretation of the regression findings. Statistically, one of the most influential factors related to increased salary levels was being a member of powerful and/or marketable departments or schools. As a group faculty in law, business, computer science, and physics received higher yearly incomes than professors in other departments. This finding reflects national trends reported in Academe magazine. Departments and schools that received higher salaries at the present University were also those most rewarded in the nationwide survey. Figure 14 compares salary averages earned by full professors for two groups:

Figure 14

A Comparison of 1985 Salary Averages for National and University Full Professors in Selected Fields

Department	National Average	Current University
Psychology	$44,812	$36,737
Biology	$45,050	$40,533
Social Science	$45,519	$40,560
Mathematics	$46,053	$37,300
Physics	$47,630	$43,082
Chemistry	$47,639	$39,440
Business	$50,792	$48,264
Computer Science	$51,840	$43,050
Law	$62,177	$58,415

Naturally, it would constitute a mistake to over-generalize from these figures. Comparing unstandardized salary averages across many institutions obscures differences in the relative cost of living in various geographical areas, and does not take into account important salary determinants such as productivity levels or years in rank. For instance, one consequence of the relative youthfulness in the present University's computer science faculty is to cause the salary levels to appear further below the national average than they really are. Average seniority for computer professors is about nine years, compared to an institutional average of about fifteen years. Therefore, computer science professors actually receive higher salaries at the University than predicted, once age and seniority are taken into account.

Nevertheless, the strong ordinal correspondence between the two sets of mean salaries reaffirmed the decisive influence of macro level economic forces on salary levels. These findings contrast with the belief that faculty salaries are distributed solely on the basis of individual merit. Although productivity is rewarded, especially articles published and grants received, being a member of the law or business schools is still about twice as powerful as a determinant of reward, above and beyond personal performance factors. This means that even the highly meritorious faculty in the Arts and Sciences are unlikely ever to receive the same levels of remuneration for their work that accrues to the law and business professors. Therefore, being in a favorable structural or market position is highly rewarded, independently of productivity level.

Rank and seniority are definitely the major non-departmental criteria for predicting faculty reward levels. However, without further analysis, it is difficult to disentangle the relative degree of ascriptive and achievement dimensions inherent in these variables. Therefore, the theoretical questions that remain unresolved by the regression analysis center around this quality performance dialectic, i.e., are larger salaries given to selected faculty members with higher rank or more longevity on the basis of higher levels and of greater qualities of performance, or simply because faculty "fixtures" have outlasted their less enduring colleagues? Although a precise answer to this question is beyond the scope of the thesis study, a test using the productivity index as the dependent variable was initiated to operationalize the quality performance distinction. Findings are reported in the next section below.

Service to the University in an administrative capacity translates into larger salaries. Current chairpersons and professional school deans are highly rewarded for their duties. Furthermore, these increased reward levels appear to continue in some degree after the professor returns to his or her regular teaching appointment. Interestingly, high levels of performance on the third dimension of faculty merit, elected or appointed committee service, does not lead to significant increases in career salary.

A plausible explanation for the paramount significance of aggregate-level reward predictors, e.g., discipline affiliation, points to the influence of market factors on administrative allocation decisions regarding entry level emoluments and yearly

adjustments in salary increments. Findings from other studies support this conclusion. For example, Marshall and Perrucci describe the administrative reward allocation process in modern organizations as "both technical and political in nature" (Marshall & Perrucci, 1982: p. 127). In other words, both merit and extra-merit criteria affect administrative allocation decisions pertaining to career salary distribution patterns. Therefore, reference to the institution's generalized attribute-reward set actually covers several potential classes of resource-allocation criteria. These classes can be categorized as exhibiting combinations of 1) merit based, 2) non-merit based, and 3) extra-merit based resource-allocation principles.

One interpretation of the regression findings indicates that although productivity is generally rewarded at the University per se, different ratios of pecuniary benefits accrue for similar rates of productivity; the major difference being academic discipline or intra-departmental specialization. For example, although the Dean of Arts and Sciences claimed he allocated 90% of the yearly salary adjustments on the basis of personal merit, he also admitted that market conditions force him to pay selected groups of scholars higher base salaries. His rationale for these disparities involved attracting competent new professors for certain highly marketable departments. Of course, one consequence of this uncomfortable mixture of "merit and market" is the undermining of a pure meritocratic, achievement-based allocation system.

In the context of the University, while personal performance

initiatives and individual productivity were significantly rewarded overall, it also appeared as though certain performance initiatives received greater rewards than others. Testing this hypothesis required the formulation of a productivity index. Discussed in detail in the following section, a regression analysis was undertaken during phase one using the productivity index as the dependent variable. Findings from this investigation illustrated that differential rates of remuneration by degree field were non-related or even negatively related with merit. That is, many reward disparities occur independently of meritorious productivity, when merit is defined as research, teaching, or service performance. Both conditions suggest the existence of market or politically-based inequities. Based upon these findings, it appeared that further substantive and theoretical research should concentrate upon the market and political power factors influencing reward distribution within the University, rather than focusing solely upon personal merit or background characteristics as primary salary determinants. The next section reports the findings from empirical research on this and two related topics.

TOPICS RELATED TO THE RESOURCE ALLOCATION PROCESS

As stated in the thesis introduction, this study was designed as a test for the determinants of faculty salary and professorial morale. However, three related topics frequently discussed and studied in the literature were also investigated:

- o Market and political factors and their relative degree of influence on salary.
- o Sexual discrimination and structured reward dualism.
- o Tenure and its impact on productivity.

Findings from these analyses are presented below in the order listed.

Market and Merit Factors

According to Marshall and Perrucci, the structure of academic fields and institutions must be considered as an important context when examining the relative impact of internally and externally oriented achievement activities influencing faculty salaries and professorial ranking (Marshall & Perrucci, 1983). This underscores the materialist premise that individual rewards are allocated within a historical and institutionalized political/power structure sui generis, relative to individual members at the University. Therefore, it is conceivable that high levels of academic productivity (operationalized by an index comprised of books and articles published, grants received, elected and appointed committees served on, and receipt of teaching awards) may indeed increase a

professor's rewards. However, diverse market demands for skills related to various fields prevents all faculty members from being rewarded equally for similar levels of productivity, especially when new faculty are hired in fields with a "seller's market" predominating for possession of certain technical skills. In other words, while merit may be rewarded in general, non-achievement or extra-merit factors may be more significant in accounting for differences in the basic salary distribution. Marshall and Perrucci recognize the tension between universalism and particularism when they state:

> The evidence of deviations from achievement standards may not indicate the total abandonment of such standards but the existence of a mix of achievement and ascriptive standards (Marshall & Perrucci, 1982: p. 129).

One of the most important measures for theoretical purposes in the study was the index constructed to capture variations in the degree of professorial merit. Due to the difficulty inherent in formulating an "objective" measure of merit, a different approach was used, one that approximated the University's empirical definition of meritorious performance. P_INDEX, the weighted composite performance variable, was constructed to facilitate this objective. An aggregate measure of faculty merit conceptually necessary in order to achieve a more generalized productivity index for operationalizing the concept of meritorious performance. This index of overall merit, (known as P_INDEX), was used as a dependent variable in the following analysis. The productivity index was created by summing each professor's score on the six separate merit terms:

- o Articles published
- o Grants received
- o Total committees served on
- o Elected committees served on
- o Teaching awards received
- o Books published

Rather than combining the scores for all six index components together to form a simple additive index, however, each separate component of merit was weighted. A weighting scheme was developed where each raw variable score was multiplied by a constant. Six constants, representing each separate merit component, were derived from the standardized beta coefficients. These beta weights were generated when all the merit terms were included in the regression analysis as six separate variables. An overall productivity score formed by the composite index was calculated by multiplying individual raw scores by the standardized regression coefficient for the appropriate index component, and then adding up the weighted components. Illustrated below is the formula depicting the relative strength of all six beta weights used to construct the productivity index. A brief definition and description of the mnemonic identifiers appears below:

```
P_INDEX = ((TCHAWARD*.04) + (NCOMTOT*.05) + (NELECTOT*.04) +
           (LOG_ART*.14) + (TOTGRANT*.09) + (BOOK_PUB*.02))
```

Three components of the productivity index were related to internally oriented performance criteria:

- o TCHAWARD - An award given for superior teaching from 1968 thru 1984.
- o NELECTOT - Number of elected committees served on during 1980 thru 1985.
- O NCOMTOT - Total number of committees served on from 1980 thru 1985.

The other three externally oriented performance terms were:

- o LOGART - The logarithm of all articles published during 1980 thru 1985.
- o TOTGRANT - The total number of outside grants received during 1980 thru 1985.
- o BOOK_PUB - A dummy variable, where unity indicated the publication of at least one book within the previous ten years.

As depicted in the preceding equation, the productivity index weights articles and grants more heavily than the other components in an effort to increase the measure's reflection of the actual rewards accruing for certain types of performance activities.

Through the use of the beta coefficient weighting scheme it was possible to submit an interesting hypothesis to test. With the formation of the general productivity index it became possible to treat the variation in faculty merit as a dependent variable. The next logical progression was to use the other ten significant predictor variables from the regression equation to determine the extent to which they could be classified as merit based, non-merit based, or extra-merit based.

Figure 15 illustrates the relationship between merit and the other predictors of university career salary levels. Operationalized by using the productivity index, (P_INDEX), as the dependent variable, this test showed how the ten significant independent variables were related to merit. Regression analysis was undertaken to test the following theoretical proposition:

- o If the University resource-allocation system operates in a purely meritocractic fashion then the variables most related to salary levels, e.g., rank, years in service, etc,

> ought to be the factors most highly correlated with the distribution of the productivity index.

For example, if rank was strongly related to salary increases then higher ranked professors should exhibit correspondingly higher rates of productivity than lower ranked ones. Judging from the relatively insignificant coefficient of determination, however, (R-Square = 0.22), there did not appear to be a very strong relationship between predictors of career salary and productivity levels.

Figure 15

The Relationship Between Merit
and Other Predictors of
University Salary Levels

Multiple R	.46947		
R Square	.22040	R Square Change	.01008
Adjusted R Square	.20744	F Change	4.66800
Standard Error	.18907	Signif F Change	.0314

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	6	3.64826	.60804
Residual	361	12.90449	.03575

F = 17.00987 Signif F = .0000

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
RANK86	.114049	.015197	.487529	7.505	.0000
BUS_PROF	-.101832	.035044	-.139040	-2.906	.0039
SERV_YRS	-.006691	.001673	-.424592	-4.000	.0001
BASE_12	.144845	.048977	.139276	2.957	.0033
UNI_YRS	.006480	.002671	.264626	2.426	.0157
LAW_PROF	-.102199	.047302	-.106630	-2.161	.0314
(Constant)	-.041504	.038319		-1.083	.2795

---------- Variables not in the Equation ----------

Variable	Beta In	Partial	Min Toler	T	Sig T
X_ADMIN	-.072794	-.074778	.175675	-1.423	.1557
COMPPROF	.004136	.004596	.181367	.087	.9306
CURCHAIR	.049583	.055656	.181144	1.058	.2909
HOT_DEPT	-.039892	-.044036	.180383	-.836	.4035

Summary of Findings

- The rank of a professor offers a good predictor of his or her productivity. Associate and full professors generally publish more articles and books. In addition, they also serve on more elected and appointed committees, and receive more grants than assistant professors, lecturers, and instructors.

- A twelve month contract is moderately related to merit, probably due to the influence of the physics professors

with full-year teaching appointments. As a department, physics consistently has the highest productivity rating of any field at the University. The overall University productivity average equalled 0.112; the physics department average was almost triple, 0.317.

- o The number of years at the University is moderately related to merit, while total years of service showed a high negative relation to merit. This finding supports the earlier contention that professors who are relatively new at the University generally produce more than those with longer continuous service to the University. Naturally, a professor may be new at the University, but also have many years of seniority.

- o The law and business indicator variables were negatively related to merit. This finding was rather surprising. Despite the fact that the law and business faculty have the highest average salaries at the University they tended to have lower scores on the productivity index than faculty in the Arts and Sciences. Since the professional school professors do not serve on Arts and Science committees they were given the average score (0.112) for elected and appointed committee service at the institution. Using the "mean-substitution" technique allowed law and business faculty to be neither penalized nor rewarded for their lack of an opportunity to serve on committees in the Arts and Sciences.

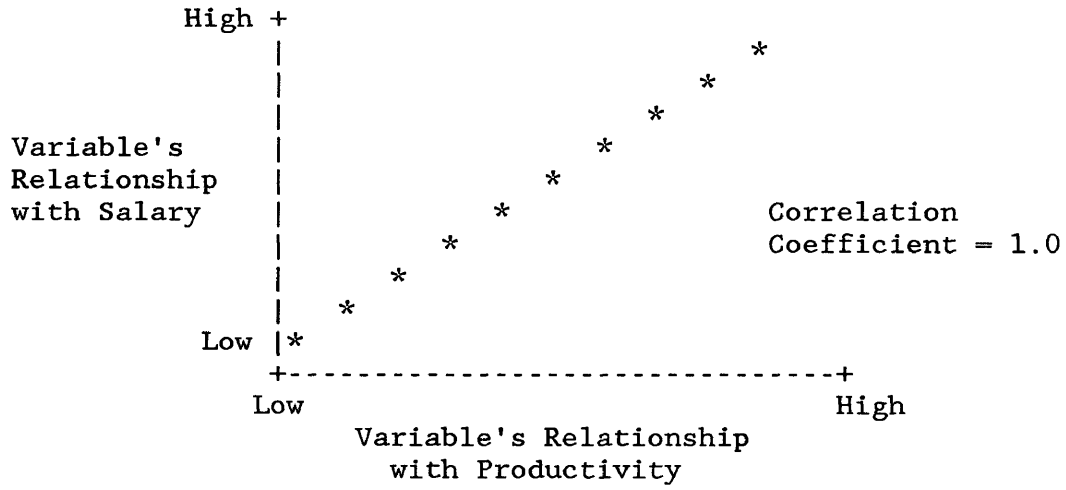
- o None of the more rewarded departments (education, computer science, history, and economics) are related to higher or lower levels of merit. Rewards for these departments seem to be more indicative of market factors than productivity levels, per se.

- o The variables indicating current and former chairpersons and deans are not related to merit. Perhaps there is a trade-off between research productivity and teaching quality, on the one hand, versus handling departmental administrative functions.

If salary rewards had been distributed in a completely meritocratic manner then the Ideal Type graph of the merit - salary relationship would resemble Figure 16.

Figure 16

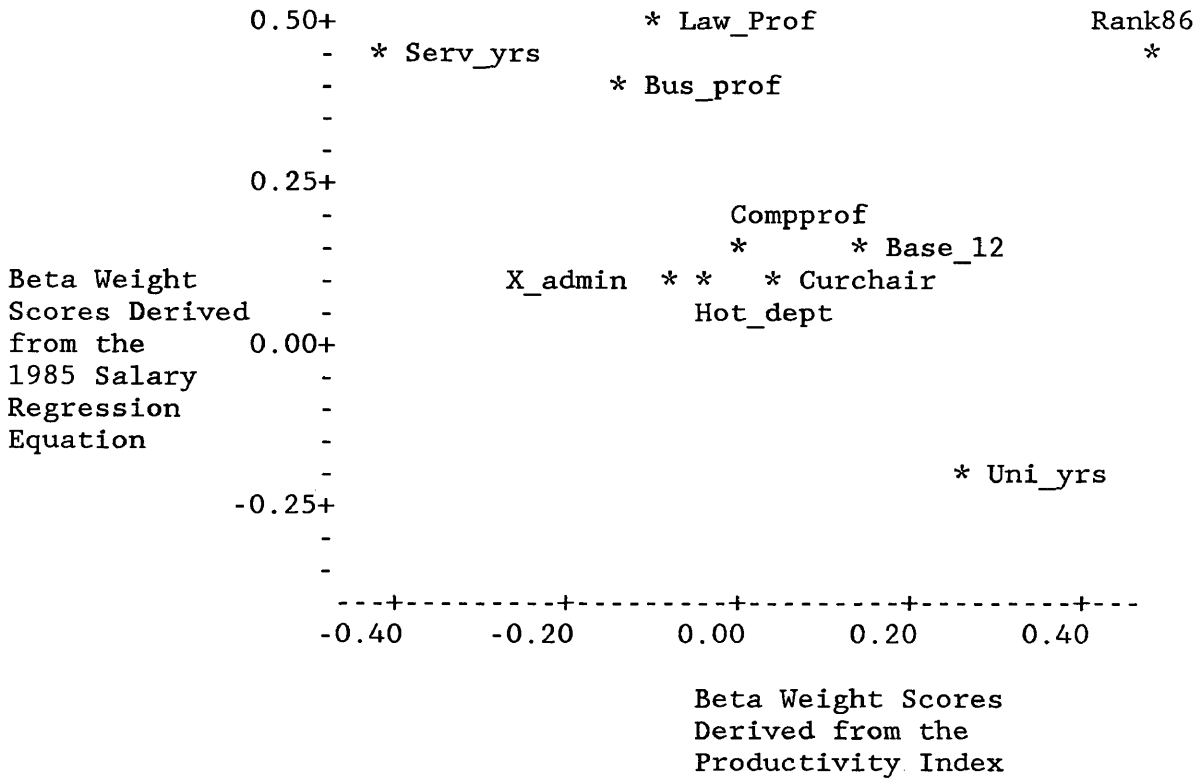
Ideal Relationship Between Salary Predictors and Merit Predictors



Using Figure 16 as the Ideal Type it was possible to calculate the University's degree of deviation from the meritocratic model. Figure 16 is a plot of the actual relationship between independent variables predictive of salary and their correlation with their relationship to the productivity index. In order to measure the degree of deviation from the Ideal Type the correlation coefficient of the University's merit - salary plot was calculated. Figure 16 displays the distribution of beta weights from the productivity regression runs plotted against beta weights obtained from the earlier 1985 career salary regression runs in phase one.

Figure 17

Plot of the Relationship
Between Salary Predictors
and the Productivity Index



In contrast to the perfect correlation of the pure meritocratic Ideal Type, (where r = 1.0), the Pearson's correlation coefficient for the University merit - salary data was -0.324. In other words, there is actually a mild negative relationship existing between the strength of independent variables used as salary predictors and the strength of the same independent variables used as productivity predictors. Even taking into account the imprecision of the productivity measure, as well as some degree of multicollinearity among independent variables, this plot indicates that the University's resource-allocation system deviates considerably from an Ideal Type of meritocracy. Based upon the results of the questionnaire survey

conducted for phase two of the study, however, it is doubtful that anyone at the University, including the administration, is aware of the extent of the discrepancy between merit and reward factors. This knowledge gap may be partially responsible for the results discovered concerning the effect of structural conditions upon faculty morale levels reported below in the phase two write-up. Unequivocable conclusions are not justified from the data, which is most useful when analyzed as a heuristic device. However, it would be highly fallacious to conclude that anything resembling a pure meritocratic resource-allocation system existed at the University, since certain variables highly related to salary were neutral, or negatively related to productivity.

TESTING FOR SEX DISCRIMINATION

A large body of research literature exists describing the reward-dualism created by sexual discrimination in academia (Bayer & Astin, 1968; Reagan & Maynard, 1974; LaSorte, 1971; Suter & Herman, 1973). General consensus among the authors holds that an "achievement ideology operates, but it is practiced under standards that are different for each sex" (Fox, 1981: p. 71). Tests for sexual discrimination at the University were conducted using two methodologies. Rather than reducing the reward-dualism argument to ideological logomachy, the gender discrimination hypothesis was operationalized using a dummy variable and the SPSSX split files technique.

First, the dichotomous variable GENDER was included in the regression analysis, (males=0, females=1). It never attained the requisite level of significance to be included in the final regression equation, however. Second, a graphic analysis was created by sorting and then splitting the database file by GENDER, deriving a salary regression equation for men only, and then applying it to the remaining female faculty members. Graphically apparent from the histogram in Figure 18 below, results of the hypothesis testing showed no statistically significant rationale for rejecting the null hypothesis of no relationship between salary levels and gender. Figure 18 depicts the standardized residual output for male

professors at the University. Based upon the approximately bell-shaped distribution of the cases it appeared that the regression residuals were randomly correlated with the independent variables, thereby fulfilling the Gauss/Markov assumptions regarding the normality of the distribution for scores on the dependent variable.

Figure 18

Histogram - Standardized Residuals
for Regression Equation, Males Only

```
  N Exp N      (* = 1 Cases,      : = Normal Curve)
  0   .24   Out
  0   .47  3.00
  2  1.20  2.67 :*
  4  2.74  2.33 **:*
  7  5.60  2.00 *****:*
 11 10.26  1.67 *********:*
 11 16.84  1.33 **********     .
 18 24.76  1.00 ******************      .
 34 32.61   .67 ********************************:*
 49 38.46   .33 ****************************************:**********
 38 40.64   .00 ************************************
 37 38.46  -.33 ************************************.
 35 32.61  -.67 ********************************:**
 27 24.76 -1.00 ************************:**
 18 16.84 -1.33 ****************:*
  7 10.26 -1.67 *******
  3  5.60 -2.00 ***  .
  5  2.74 -2.33 **:**
  0  1.20 -2.67 .
  1   .47 -3.00 *
  0   .24   Out
```

The following histogram, Figure 19, shows the distribution of standardized residuals created for females professors at the University. Note that the observed female salaries approximate a normally distributed population when predicted from the male equation, i.e., most of the residuals are underneath the outline of the normalized bell curve. Statistically, R-Square, measuring the goodness of fit for the male equation was 0.88, which is both highly

significant and very similar to the 0.90 for female professors.

Figure 19

Histogram - Standardized Residuals
for Regression Equation, Females Only

```
 N Exp N      (X = 1 Cases,      : = Normal Curve)
 0   .05   Out
 0   .09  3.00
 0   .24  2.67
 0   .54  2.33 .
 0  1.11  2.00 .
 1  2.04  1.67 X.                        Females only
 2  3.35  1.33 XX.
 3  4.92  1.00 XXX .
 3  6.48   .67 XXXX .
11  7.64   .33 XXXXXXX:XXX
10  8.07   .00 XXXXXXX:XX
 7  7.64  -.33 XXXXXXX.
10  6.48  -.67 XXXXX:XXXX
 6  4.92 -1.00 XXXX:X
 6  3.35 -1.33 XX:XX
 1  2.04 -1.67 X.
 0  1.11 -2.00 .
 1   .54 -2.33 :
 0   .24 -2.67
 0   .09 -3.00
 0   .05   Out
```

Both sets of statistical tests confirmed the position expressed in an interview with a member of the University's Affirmative Action Committee. She stated that "Salary discrimination by sex has been weeded out of the university's reward structure." If discrimination by sex had significantly affected 1985 salaries, female professors would have exhibited predominately negative residuals for predicted salary, (based on the men's equation), versus their actual salaries. Judging from the histogram in Figure 19 above, this was not the case. Of course, it is beyond the scope of the study to test so called "hidden discrimination", i.e., differential hiring practices for new professors, or the broader societal and economic question of

channeling females into lower paying, less prestigious jobs within the University (Fox, 1981: p. 80).

TENURE AND PRODUCTIVITY

Two competing hypotheses tested with the institutional data investigated the impact of tenure upon productivity levels. One traditional representative extreme contends that receiving tenure tends to have a negative effect on teaching quality and research productivity, especially on the number of articles and books published. From this perspective, professors are considered as miniature Machiavellians, taking advantage of tenure's non-accountability by reducing research workloads and lowering teaching performances. Once tenure is granted, and the effects of negative sanctioning from colleagues or administrators for substandard teaching performances is diminished, faculty presumably become adamantly opposed to further intellectual development.

However, another line of reasoning, which operates from a different model of human behavior, argues that tenure is a reward given to highly productive faculty members who survive the merit selection process. Obtaining tenure is seen as an accomplishment achieved by self-motivated scholars who are judged worthy to receive the honor of lifetime employment. Although this extreme may be somewhat idealistic, it does illustrate the need for an attention to intrinsic reward factors available to motivate faculty, beyond the carrot and stick approach. Using the time-series database as the benchmark, an earlier study by Faia entitled Does Tenure Create

Deadwood? was replicated (Faia, 1975). A difference of means, or T-Test, was run using tenure as the independent variable and the scores from the productivity index as the dependent variable. Figure 20 reports the findings:

Figure 20

T-Test of the Difference in Productivity Scores Between Faculty With Tenure and Faculty Without Tenure

VARIABLE: P_INDEX	NUMBER OF CASES	MEAN MERIT	STANDARD DEVIATION	STANDARD ERROR
NON-TENURED	100	0.0942	0.133	0.013
TENURED	284	0.3038	0.208	0.012

POOLED VARIANCE ESTIMATE				
F VALUE	2-TAIL PROB.	T VALUE	DEGREES OF FREEDOM	2-TAIL PROB.
2.46	0.000	-9.42	382	0.000

Based on the significantly higher mean productivity scores exhibited by the tenured faculty the null hypothesis of no difference between means was rejected at the 0.05 significance level. This conclusion provided support for the merit-selection hypothesis, which states that tenure is a reward given to the more productive faculty. Apparently, receiving tenure is not inimical to future productivity levels either; at the present University, tenured faculty produce more books and articles, receive more teaching awards and total grants, and serve on more elected and appointed committees.

However, this finding is not particularly surprising when the differences in choice opportunities available to tenured professors

are taken into account. It is conceivable that tenured professors may get greater recognition for their work in intra- and inter-university circles. Receiving tenure represents a symbolic acceptance by a university's community of scholars. Once established, tenured professors may therefore be in a better structural position to receive grants, publish articles in top name professional journals, or get elected to powerful university committees. Furthermore, faculty who are not on tenure track, e.g., English professors with three-year, non-renewable contracts, may face the demoralizing dilemma of "publish and perish" working conditions. In fact, with economic conditions reducing the number of quality tenure track job openings nationwide, many itinerant liberal arts faculty may spend the bulk of their time working on resumes rather than research proposals.

FINDINGS: PHASE TWO

Operationalizing phase two of the study required the consolidation of two information sources. Questionnaire data collected from personal interviews with selected professors was combined together with the information previously gathered from the University's archives and master personnel file. Surveys were given to forty-five faculty members drawn from a stratified, non-proportionate, random sample created by using the SPSSX SAMPLE command. Twenty-eight of the interviews were conducted at one of the many computer terminals on campus, the measurement instrument being a questionnaire program developed and written by the author. Since several academic buildings on campus had limited access to on-line terminals, a pencil and paper questionnaire was used in conjunction with the computer program to interview the remaining seventeen faculty. Each survey medium appeared to elicit the same types of responses, there did not seem to be any bias associated with using two different data collection techniques. Once all the surveys were completed, file merging techniques available in the SPSSX package were used to integrate the two data sets from phases one and two. After the two databases were combined, descriptive statistics were formulated and several multiple regression analyses were undertaken to test the three major hypotheses on faculty morale defined earlier in the theoretical synopsis for phase two.

Briefly summarizing the main points advanced during previous discussions of phase one and two, in the intensive case study the regression equation modeling the generalized attribute-reward set was considered as a contextual representation of the University's resource-allocation system. Components of the generalized attribute-reward set, (i.e., the independent variables comprising the regression equation output from statistical analyses), were both supra-individual and supra-departmental in their scope. In one sense, the twelve significant variables reflected explicit or implicit administrative decision-making processes. That is, current determinants of the 1985 career salary distribution evolved from policies enacted over time by previous and present deans, department heads, and personnel committees. In another sense, these policies were based upon their collective representation of what constitutes valuable work at the institution. Valuable work, in this context, is not necessarily synonymous with some ideal scholastic "quality." Instead, it also refers to a market definition of certain attributes perceived by administrators as exhibiting economic value and academic merit.

The expectancy hypothesis, the perceived volition hypothesis, and the status discrepancy hypothesis were operationalized to test the major theoretical perspectives in phase two. Each position was considered as a potential explanans for faculty job satisfaction levels. Before discussing the findings stemming from empirical tests conducted on the three main attitude formation hypotheses, however, a short review of the other relevant information gleaned from the

survey responses will be presented. In the following write-up, descriptive statistics from the intensive interviews are used to give a general overview revealing many facets of faculty work experiences at the institution.

General Results from the Survey

Figure 21 presents two characteristics of the forty-five sampled faculty members and compares them with the total sample population:

Figure 21

Comparison of the Sampled Professors Versus the Sample Population

Rank

Current Rank	University Percentage	Sample Percentage
Assistant Professors	17	17
Associate Professors	34	28
Full Professors	42	43
Eminent Scholars	4	10

Tenure

Tenure Status	Univerity Percentage	Sample Percentage
Tenured	76	87
Non Tenured	24	13

Current academic rank of the sampled faculty was proportionately similar to the actual percentage of eminent scholars, full, associate, and assistant professors in the University's faculty population. An eleven percent difference existed, however, when the proportion of tenured professors versus non-tenured professors was compared between the sample and population groupings. It was not clear what the consequences were of having tenured professors

somewhat overrepresented among the professors selected for intensive interviews.

In reply to a question regarding which dimension of academic scholarship professors emphasized most in their work, forty-four percent of the respondents indicated that their interests were equally balanced between teaching and research. Twenty-six percent said that while they emphasized both, they leaned more towards research. The remaining thirty percent reported greater interest in teaching, compared with publishing and other forms of research. In addition, faculty scores on self-rated research performance had a greater range than scores reported for self-rated teaching ability. This finding appeared in response to a question where professors were asked to rate their performances as teachers and publishing research scholars in their respective fields. On a scale of one to nine, the average self-rating for publishing research performance was 5.4, whereas the teaching average was appreciably higher, 7.2. Interestingly, while thirty percent of the faculty rated themselves as below average researchers, none of the respondents considered themselves as below average teachers. In general, therefore, it seemed that more professors considered themselves as better teachers than researchers at the Univerisity. Faculty members were also asked to rate their performance in the area of service to the University. The average self-rating for service to the college came out to 6.5, approximately halfway between the teaching and research ratings.

Since the study focused upon both objective and subjective dimensions of salary and morale, several questions were asked that

related to faculty perceptions of their salary conditions. Interviewed professors were queried as to whether they believed that their current salary level was less than it should be, greater than it should be, or about right, in terms of their merit levels over the last few years. Forty percent of the faculty respondents reported that, based on their past performance, their current salaries are about right. However, another forty percent believed that their income was somewhat less than what it should be, and seventeen percent stated that their salaries were much lower than what they deserved, when compared to their teaching ability, research productivity, and service to the University.

Replies to a question designed to capture the general attitude of faculty members towards the institution revealed that sixty one percent of the respondents felt that the University was a very good place for them to work. Thirty-five percent claimed it was a fairly good place for them, and only four percent believed that it was not a good place for them be employed as professors. Furthermore, general morale levels at the University appeared to be on the upswing. Fifty-six percent of the sampled professors reported their morale to be higher today than it was five years ago, twenty-five percent reported no change, and only seventeen percent indicated that they were less satisfied with their job conditions today compared with five years ago.

Despite a salient perception of institutionalized reward inequities by faculty, eighty-seven percent of the professors interviewed stated that they would choose to enter the same academic

field, if they were given a chance to complete their education all over again. In addition, seventy percent of the faculty respondents indicated that knowing what they know now, they would decide without hesitation to become a professor, if they were able to remake their career plans a second time. Collecting such positive results as these imply several plausible conclusions. First, professors may be hesitant to express their discontents to an unfamiliar researcher. Second, faculty members might suffer from widespread "false consciousness." Third, professors may actually be reasonably satisfied with their current levels of remuneration. Or fourth, they might derive a great deal of intrinsic reward from their work.

Another section of the survey tapped into an area that would lead to the operationalization of the perceived volition hypothesis. To facilitate this end, professors were asked to specify two items related to their perceived ability to exert control over their lifespace. First, respondents were asked how active they were in the political affairs of their department. Second, they were requested to indicate their perceived degree of influence on intra-departmental policy decisions. Next, professors were asked to change the referent of the question, comparing their activity level and influence on the general policies of the University as a whole. Not surprisingly, professors overwhelmingly believed that they are more active and hold more influence over department decision-making policies than they do in the broader affairs of the University. A variable referred to as DEPT_INF was created from faculty responses to the question about perceived influence over departmental affairs. Subsequent empirical

hypothesis testing of the perceived volition theory researched whether or not greater degree of perceived influence over departmental affairs was related to higher levels of job satisfaction.

FORMATION OF THE MORALE INDEX

Statistical analysis of the integrated database, formed by the consolidation of University records with interview responses collected from the sampled professors, revealed a number of interesting characteristics related to the University's merit and morale dynamics. In particular, a morale index, identified mnemonically as F_MORALE (faculty morale), was constructed from the data set containing the forty-five faculty interview responses. Thirteen separate questions investigating several dimensions of professorial job satisfaction were included in the faculty survey in order to explore the morale issue from a number of directions. Since an "overall" attitudinal measure of job satisfaction was desired, adding these thirteen questions together created a manifold, composite morale index. The index consisted of questions involving assertions about assorted aspects of morale. Professors were asked to indicate varying degrees of agreement or disagreement with these statements. Figure 22 presents the thirteen questions adapted from Brayfield and Rothe's index of job satisfaction (Brayfield & Rothe, 1951: p. 307-11):

Figure 22

Components of the Morale Index

- o My academic work is usually interesting enough to keep me from getting bored.
- o I consider being a professor a rather unpleasant occupation.
- o I enjoy my work more than my leisure time.
- o I feel fairly well satisfied with my job.
- o Most of the time I have to force myself to work.
- o I feel that I am happier in my work than most other people.
- o I definitely dislike my work.
- o I like my job better than the average professor does.
- o I find real enjoyment in my scholarly work.
- o I am disappointed that I ever came to William and Mary.
- o There are some conditions concerning my job as a professor that could be improved.
- o My job is usually pleasant, like a hobby.
- o It seems that my non-professor friends find their careers more stimulating than I find my career.

Sampled professors chose their responses from a Likert scoring system consisting of five categories representing various degrees of agreement - disagreement:

[1] Strongly agree
[2] Agree
[3] Undecided
[4] Disagree
[5] Strongly disagree

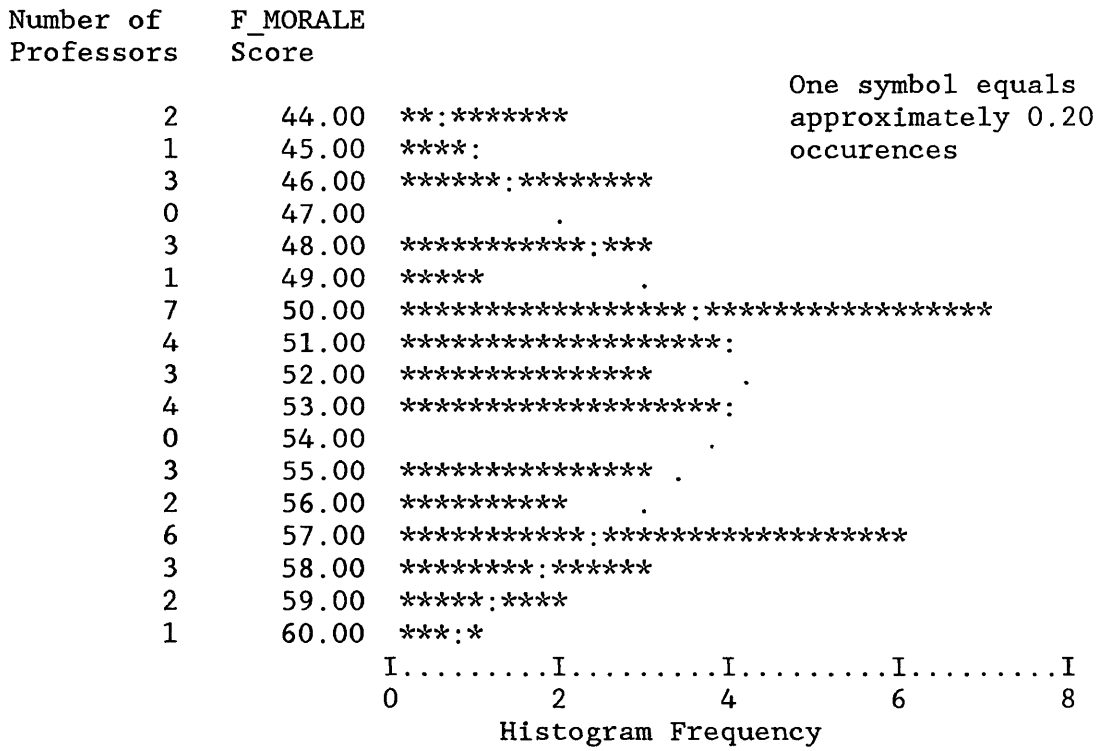
Each one of the thirteen separate component questions used the Likert score weighting scheme. Possible responses for each item ranged from one to five. By summing up each professor's scores on the thirteen separate components an arguably interval index consisting of total points for each respondent was created. The morale index was subsequently applied as a dependent variable in the regression runs.

SPSSX recode commands were used to transform the direction of the scores for seven questions, in such a way that professors with the higher total scores on the morale index represented the satisfied end of the scale, while the lower scores represented the dissatisfied end. The range of possible total index scores ran from sixty-five (highest morale) to thirteen (lowest morale), with scores of thirty-six (undecided) as the neutral point. Significantly, most of the index scores clustered toward the upper end of the fifty-two point scale. In general, the shape of this distribution meant that professors at the University exhibited rather high levels of work-related morale.

Figure 23 displays a histogram of the faculty morale distribution corresponding with the composite F_MORALE index:

Figure 23

Histogram of the Distribution
of Faculty Morale Scores Taken
from the Morale Index



Since potential scores on the morale index ranged from thirteen to sixty-five it is obvious that all the cases fell within the high-morale half of the distribution. The average faculty morale score was twenty-six. In the following summary a detailed examination of the findings from both stages in phase two is presented. The first section discusses stage one of phase two, which dealt with faculty perceptions of the association between merit and reward processes at the institution. The second section describes the findings from empirical tests of the status discrepancy hypothesis, as well as the results from hypothesis tests of expectancy theory and perceived volition theory.

FINDINGS: STAGE ONE

Stage one of phase two dealt with professorial perceptions and judgments about the resource-allocation system operating at the institution. The objective was to discover the extent to which individual faculty members were aware of their "objective" position regarding the degree and signed direction of their status discrepancies. Discovering the correspondence between "subjective" perceptions and "objective" social structures had important implications for achieving the epistemological sophistication necessary to properly operationalize and interpret the expectancy hypothesis, the perceived volition hypothesis, and the status discrepancy hypothesis. According to the latter hypothesis, for instance, lower levels of job satisfaction should have been reported by those professors exhibiting a significant disjunction between observed and predicted salaries. In the context of the regression analysis, observed career salaries represented the reward level received for faculty status resource sets. Predicted salaries, on the other hand, symbolized the level of reward normally accruing for possession of these generally rewarded attributes, (where the comparison group was other professors with similar merit, seniority, and rank characteristics).

The inclusion of faculty perceptions as a possible explanans for morale required formulating a multi-staged scheme modeling the

determinants of attitude-formation. Adequately investigating subtleties of the attitude-formation process required a multidimensional approach to avoid conflating various levels of analysis. Therefore, two regression analyses were used to operationalize the multi-staged model. During the statistical research, the first level of analysis measured the impact of several factors, including degree of status discrepancy, on the "perceived" association between merit and reward. In the second level of analysis, statistical methods calculated the relative effects of "subjective" perceptions, and "objective" status discrepancies upon job satisfaction and work-related morale. Based upon analysis of the survey responses, it appeared that economic factors, i.e., salary levels and the signed direction and magnitude of a professor's status discrepancy, were not directly related to work-related morale levels. However, these material conditions were moderately correlated with responses given to a survey question measuring professorial perceptions of a merit reward association. In addition to operationalizing the expectancy hypothesis, this questionnaire item was also related to epistemological issues regarding the effects of cognitive mediation on attitude-formation.

Depicted below is a categorical breakdown of faculty responses to the question used to operationalize expectancy theory. The question was stated as follows:

> At the present time, do you feel that you are rewarded in proportion to the quality of your job performance?

Responses indicating a professor's perception of the association between his merit and rewarded ranged as follows:

13%	Definitely not	33%	Probably yes
28%	Probably not	15%	Definitely yes
11%	Undecided		

This question was taken from a survey used in a study conducted by Keaveny and Allen to measure faculty perceptions of the merit and reward association at the University of Wyoming (Keaveny and Allen, 1983: p. 17). In their article, "The Implications of an Across-The-Board Salary Increase", they argued that the most salient predictor of morale and job satisfaction was the perceived association between a professor's merit and subsequent reward levels. Operating under the rubric of expectancy theory, Keaveny and Allen state that higher reported morale should correspond to those professors perceiving a close connection between their performance levels and the amount of recognition and reward they receive for their merit.

In a related question, professors were asked to look ahead to the salary adjustments at the end of the current school year and report whether they believed that their merit rating would be the primary basis upon which their salary adjustment would be granted. Other potential non-merit based resource-allocation strategies would include such factors as political connections and/or differential market conditions. Four percent of the interviewed faculty believed that their research, teaching, and service performance would

definitely not be the primary basis for granting raises, while only another two percent thought that it probably would not be the primary basis. Fifty-two percent, on the other hand, were fairly sure that merit ratings would be the primary basis for annual raises, while thirty-two percent definitely felt that they would be rewarded on the basis of their personal productivity during the next salary evaluation. Nine percent of the interviewed faculty members were uncertain whether or not their annual salary adjustments would be based predominantly on performance factors.

Figure 24 displays in percentage form the distribution of faculty responses to the two merit/reward association questions. The first column of percentages refers to a perception of merit/reward association for base salary levels, whereas the second column refers to the perceived merit/reward association for annual salary adjustments.

Figure 24

Percent of Perceived Merit/Reward Association for Base Salary Levels and Annual Raises

Choice Categories	Base Salaries	Annual Raises
Definitely Not	13%	4%
Probably Not	28%	2%
Undecided	11%	9%
Probably Yes	33%	52%
Definitely Yes	15%	32%

Obviously, a striking difference exists between the general belief that basic career salary levels currently reflect the quality of a professor's performance, on the one hand, and the expectation

that future rewards will be based primarily upon merit, on the other. The differences in the distribution of responses to these two questions reveals a tension between equitable yearly salary increases (which according to the Dean of Arts and Sciences are heavily weighted by individual merit), and the unequal foundation of base salaries (which research in phase one has demonstrated to correspond highly with macro level economic forces). In other words, professors may feel that they can exert influence over the amount of their annual salary raises, but they do not necessarily believe they can completely eradicate the effects of structured inequities in the resource-allocation system through increased personal efforts, per se.

Following the example of Keaveny and Allen, the measure chosen to operationalize the expectancy hypothesis was the perceived merit/reward association for base salary levels. In addition to representing expectancy theory, this measure was also used as a dependent variable known as MERIT_Q (merit question) in a regression equation for stage one. Zero-order correlations between the distribution of professorial responses to the perceived association of merit and reward and the independent variable DISCREP was high (R=0.61). DISCREP was a variable measuring the signed direction and magnitude of each professor's status discrepancy. In addition, when entered as the dependent variable in the regression analysis, the distribution of faculty responses for MERIT_Q were also significantly related to three other independent variables, GEN_ATT, R_RATE1, and SALARY85. Definitions and interpretations of all four significant

predictor variables follow Figure 25. Regression output in Figure 25 provides a statistical summary of the degree to which each variable is correlated with faculty responses to the perceived merit/reward association.

Figure 25

Determinants of the Perceived
Merit and Reward Association

Multiple R	.76653		
R Square	.58757	R Square Change	-.00746
Adjusted R Square	.54632	F Change	.71874
Standard Error	.88055	Signif F Change	.4017

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	4	44.18509	11.04627
Residual	40	31.01491	.77537

F = 14.24640 Signif F = .0000

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
GEN_ATT	-.464730	.267504	-.190062	-1.737	.0900
OUTLY	.377470	.097380	.428170	3.876	.0004
R_RATE1	-.166377	.066054	-.264770	-2.519	.0159
SALARY85	.023978	.006627	.403104	3.618	.0008
(Constant)	.023650	1.432025		.017	.9869

---------- Variables not in the Equation ----------

Variable	Beta In	Partial	Min Toler	T	Sig T
DEPT_INF	-.102663	-.134521	.708108	-.848	.4017
SALARY85	-1.034166	-.133268	.006819	-.840	.4062

VARIABLE DEFINITIONS

- o MERIT_Q - Index measuring faculty perceptions of personal reward levels in proportion to the quality of their job performance?
- o SALARY85 - Career salary for each of the sample professors.
- o DISCREP - Signed direction and magnitude of professor's status discrepancies.
- o R_RATE1 - Self-reported ranking as a publishing research scholar in one's field.
- o GEN_ATT - General attitude towards the University as a working environment.

INTERPRETATION FOR STAGE ONE

Analysis of the regression revealed that 1985 career salary levels, degree of status discrepancies, general attitude towards the University, and self-rated research productivity were significantly related to reported faculty perceptions of the association between merit and reward. R_RATE1 (Beta=-0.27) was a variable taken from a survey question asking professors to indicate their self-rated ranking as a publishing research scholar in their field. The following display illustrates the question format, with the scale ranging from one to nine:

> On a scale from 1 to 9, how would you rate your performance as a publishing research scholar in your field?
>
> 1 2 3 4 5 6 7 8 9
> |----------|----------|
> Low Medium High
>
> [U] Uncertain

The negative sign on the beta weight meant that faculty members who perceived themselves as highly productive had more of a tendency to feel less satisfied with their reward levels. In other words, professors who reported themselves as top-quality publishing research scholars were less likely to believe that they were receiving proper remuneration proportionate to their productivity levels.

DISCREP (Beta=.43) was the variable created by taking the

observed career salary scores and subtracting the predicted salary amount constituted by the complex, hyper-plane of independent variables. DISCREP was considered as the empirical operationalization of the status discrepancy hypothesis. When the merit/reward association question was entered as the dependent variable, DISCREP emerged as the most powerful predictor of the distribution. This finding indicates that professors are fairly accurate in perceiving their "objective" position within the resource-allocation system. In addition, DISCREP's relatively large beta weight and positive correlation with the dependent variable indicated that those professors displaying positive status discrepancy scores also tended to be the ones who felt rewarded most closely in proportion to the quality of their performance. Conversely, faculty members with negative status discrepancies were more likely to report that their salaries were not proportionate to their quality of performance.

A variable that asked professors to indicate whether the present University was the place for them to work, a fairly good place for them to work, or not the place to work, was also significant (GEN_ATT: Beta=0.21). Judging from the relatively low beta weight, it appeared that professors who do not believe that the University is the place for them are slightly more likely to perceive a disjunction between their merit and reward levels.

Finally, the SALARY85 (Beta=.39) variable, indicating the 1985 career salary levels, also showed a moderate positive relationship with the dependent variable. This finding was interpreted to mean

that those professors feeling a strong connection between merit and reward also tended to be those who were making the larger salary amounts. Summarizing stage one of phase two, the findings suggest that widespread understanding exists around merit evaluation criteria. In fact, it appeared that many professors could accurately place themselves in terms of their degree of status discrepancy in relation to the objective allocations of the generalized attribute-reward set. Material factors, i.e., salary levels and status discrepancy scores, were the two variables most significantly related to general perceptions of the association or disassociation between merit and observed reward. Stage two complemented stage one by taking the statistical and conceptual analysis one step closer to the goal of epistemological multidimensionality. This task was accomplished throughout phase two by interpolating the subjective dispositions with the objective conditions. In stage two, therefore, both perceptual and structural variables were entered into the regression equation testing for the determinants of faculty morale.

FINDINGS: STAGE TWO

To operationalize the three attitude-formation hypotheses the distribution of the job satisfaction index scores was calibrated so that lower scores represented higher job satisfaction. Once SPSSX recodes were completed, faculty morale was then used as a dependent variable. Interestingly, despite their relationship with the perceived merit and reward association, neither salary levels nor status discrepancy factors had an impact on faculty job satisfaction, as measured by Brayfield and Rothe's morale index. In fact, significant statistical analysis testing the effects of all three attitude-formation hypotheses indicated that material and objective factors, e.g., rank, seniority, sex, field, salary levels, status discrepancies, and actual productivity levels were unrelated to reported faculty morale scores. In the output from the regression analysis presented in Figure 26 below, it is apparent that faculty job satisfaction levels were only minimally predicted by two statistically significant variables derived from the questionnaire survey in phase two. Apparently, faculty morale was relatively independent of both structural and perceived factors, factors that other studies had found to be significant determinants of job satisfaction (Keaveny & Allen, 1983; Shaver, 1975). Figure 24 illustrates the regression findings:

Figure 26

Determinant of Faculty Morale

Multiple R	.59804		
R Square	.35765	R Square Change	-.03466
Adjusted R Square	.32706	F Change	2.33857
Standard Error	3.60677	Signif F Change	.1339

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	304.20810	152.10405
Residual	42	546.36968	13.00880

F = 11.69240 Signif F = .0001

---------- Variables in the Equation ----------

Variable	B	SE B	Beta	T	Sig T
R_RATE1	1.027453	.263725	.486171	3.896	.0003
MERIT_Q	1.410096	.419688	.419277	3.360	.0017
(Constant)	42.614045	2.096117		20.330	.0000

---------- Variables not in the Equation ----------

Variable	Beta In	Partial	Min Toler	T	Sig T
OUTLY	.081556	.079782	.605976	.512	.6111
DEPT_INF	-.083391	-.091034	.765499	-.585	.5615
SALARY85	.232885	.232294	.639092	1.529	.1339

These findings were statistically and conceptually significant for several levels of analysis. First, the lack of any empirical relationship between faculty morale and the DEPT_INF and DISCREP variable meant that neither the status discrepancy hypothesis nor the perceived volition hypothesis received any support from the data. Since the discrepancy indicator and the variable measuring degree of perceived influence in the sampled professors department were not significantly correlated with morale both were dropped from the equation. Therefore, the perceived volition hypothesis and the

{status discrepancy hypothesis were rejected as plausible explanations for the faculty morale levels exhibited by respondents. In fact, based on the regression findings, the only one of the three proposed hypotheses to receive any empirical support from the data was the hypothesis derived from expectancy theory. However, even the expectancy hypothesis received only minimal support from statistical analysis.

Secondly, the results also impacted upon theoretical issues since they illustrated the necessity for including subjective perceptions, as well as structural factors, to achieve a plausible analysis of social and individual knowledge, attitudes, and practices. Finally, the conclusions were relevant for the presuppositional and meta-theoretical levels of the project. For instance, based upon the results of the project it appears that a radical positivistic or behavioristic approach to the study of human action, a la Skinner or Durkheim, is inherently flawed. Empirical analysis demonstrates the untenability of considering professors to be fully conditioned automatons, merely adapting to their external economic and social environments. Instead, it appears that faculty members embody the analytical potential for, and exhibit the empirical manifestation of, volitional attitude-formation processes. Substantive research illustrated that despite faculty perceptions of material inequities, morale levels were derived from factors other than extrinsic economic rewards or exterior conditions.

INTERPRETATION FOR STAGE TWO

Judging from the completed statistical analysis, it seems that professors at the University are aware of the presence and degree of their merit/reward discrepancies. Providing support for this assertion was the high correlation (R=0.61) existing between status discrepancy scores from the regression equation and faculty responses related to the perceived association between merit and reward. However, despite the accuracy of faculty perceptions, the factors responsible for attitude-formation were not directly related with inequities in the salary distribution, per se. Rather, they seemed to be only slightly related, in an indirect manner, through the mediation of cognitive filtering. In other words, while both over- and under-compensated professors tended to be aware of their personal economic conditions, their work-related morale did not mirror the objective degree of their status discrepancies.

Neither of the material factors, status discrepancy or 1985 salary, were significant in explaining faculty morale. In addition, the DEPT_INF variable (used to operationalize the perceived volition hypothesis) was also not a significant predictor of faculty morale. As before, the R_RATE1 variable, (indicating the professor's self-rated research ability) was related to F_MORALE. One explanation for this finding might be that those professors who publish a great deal receive greater intrinsic satisfaction and

extrinsic rewards for their high levels of scholarship. As described in phase one, in terms of the six performance components included in the productivity index, articles published was the element most highly related to salary increments. Perhaps those professors who considered themselves to be highly productive, publishing research scholars enjoy greater professional recognition as well as the challenges of scholarship involved in conducting research and writing articles and books. Therefore, even though professors who ranked themselves highly as publishing research scholars did not generally feel they were rewarded in proportion to the level of their accomplishments, they may still get more satisfaction from their jobs due to the intrinsic and extrinsic benefits they derive from their research.

As predicted by Keaveny and Allen, the perceived association between job performance and monetary reward (measured by the MERIT_Q variable) demonstrated a significant, although moderate, correlation with faculty job satisfaction (Keaveny and Allen, 1983: p. 14). This is an interesting finding when it is compared with the regression results from stage one. While the findings indicate that most professors do accurately perceive their relationship to merit and reward processes in the resource-allocation system, they do not base their work-related morale on either their perceptions of status discrepancies or on the actual discrepancies themselves.

SUMMARY OF PHASE TWO

If a theorist or research program were to cling dogmatically to the premises of the status discrepancy hypothesis (and other materialistically based explanantia for subjective dispositions like faculty morale) they would probably conclude that many professors who should have been unhappy and demoralized were not, perhaps indicating a form of "false consciousness" or an ideological identification with University authority. However, if different presuppositions are adopted, ones that stress the importance of intrinsic rewards, then the lack of a linear relationship between objective conditions and faculty attitudes becomes less anomalous and sinister. In a sense, faculty responses to the survey question pertaining to the perception of a merit reward assocation eliminated the "false-conciousness" hypothesis. Interestingly, even though many professors were aware of the degree and direction of their status disparities their morale did not appear to respond directly with positive or negative discrepancy scores. Since the empirical findings exposed the non-relationship between objective salary related conditions and job satisfaction, the presuppositions and assumptions that underlie the various theoretical perspectives presented in this thesis are called into question. Phase three examined these questions in depth, e.g., intrinsic - extrinsic sources of job satisfaction; instrumental expressive motive for human action.

A famous study conducted during World War II by sociologist Samuel Stouffer illustrated the potential fallacy created by non-reflective acceptance of certain so-called "common sense" assumptions about social relationships and work-related morale. Specifically, Stouffer's study challenged the premise of a necessary linear relationship between access to resources and rapid promotions, on one hand, with a personal sense of structural equity, on the other. Stouffer relied on reference group theory to make sense of his findings that the Military Police, who as a group had the slowest promotions in the Army, judged the promotion system more equitable than the Army Air Corps, which had the highest rate of promotions (Babbie, 1983: p. 18; Stouffer, 1949).

A similar tactic was adopted in the present study by comparing reported faculty satisfaction levels in the highly rewarded professional schools of law and business against the generally less affluent departments in the Arts and Sciences. Although the School of Education was technically recognized as a professional school, due to similar salary ranges it was included with Arts and Sciences for this particular analysis. However, all statistical tests indicated that reported faculty satisfaction was independent of department, school or academic area, e.g., humanities, social sciences, natural sciences.

Another explanation for the lack of a significant relationship between salary inequities and job morale centers upon collective representations among academicians that certain inequities are unavoidable due to differential market demands for certain skills.

Perhaps over time certain inequitable elements of the generalized attribute-reward set, (e.g., the higher salaries of law, business, and computer science), have become institutionalized as part of the resource-allocation system. If these inequities are conceived as constants or givens in the salary negotiation process many faculty members may no longer react to them as serious demoralizing circumstances. Furthermore, although this hypothesis was not directly tested, collective representations of the institutionalized inequities in the salary system may strongly influence how professors define and adapt to feelings of status discrepancy.

For instance, while nearly all of the professors who took the questionnaire reported relatively high levels of morale in relation to their teaching and research responsibilities, it appeared that they were less satisfied with many of the administrative policies both within departments and within the University at large. One empirical indication of this phenomenon was represented by the moderate correlation (R=0.48) between the faculty morale index (F_MORALE) and the general attitude measure (GEN_ATT). While most of the thirteen questions composing the F_MORALE variable focused mainly upon teaching and research experiences, the GEN_ATT measure was oriented more upon feelings towards the University as an overall institution. It is quite likely that faculty members learn to partition negative and positive feelings about their jobs, consciously or unconsciously using dissonance reduction techniques to separate teaching and research satisfactions from general or particular complaints against the University administration.

It is interesting to speculate why the faculty respondents would report such an overwhelming positive regard for their jobs at the institution. In other words, what are the factors particular to this university that would cause such a deviation from the general pessimistic morale levels reported in the latest Carnegie Study of Higher Education? One factor might be the relative inaccessiblity of the institution's salary data available for longitudinal study. Survey findings indicated that many of the salary inequities discussed in this report are not perceived in more than a general sense, e.g., Arts and Sciences professors recognize that the law and business schools are receiving more money than their performance dictates.

An additional reason for the lack of alarm over pay inequities might be that most professors seem to believe that their current salary adjustments are reflective of their personal merit. Interestingly, this belief may reflect collective recognition of recent economic changes at the University. Due to increased state fundings over the past three years the pool of money available for annual salary adjustments has grown, the new University president has apparently presented a positive leadership style, and economic trends have moved in the direction of increasing raises, physical improvements and general growth.

Perhaps because it is difficult to measure, one final explanation for high faculty morale is often overlooked in the literature on job satisfaction. Easily quantified variables such as salary conditions or "objective" status discrepancies may not be as

potent in predicting attitude-formation as are the less tangible and empirical factors such as "love of teaching and research" or other more intrinsic rewards. The following section addresses these issues and integrates all the various phases of analysis in the conclusion.

FINDINGS: PHASE THREE

According to philosopher of science Jeffrey Alexander, the founding fathers of sociology recognized, implicitly or explicitly, in their more multidimensional writings, what social philosophers from Aristotle to Adler also understood: A person's actions may be motivated both by his search for meaning, as well as by his responsiveness to conditions (real or imagined) of external material scarcity (Alexander, 1983: p. 82). Many dystopian social theorists have lamented that modern man, as a member of the other-directed mass culture, is intractably gratified to find "ontological" meaning in his covetous accumulations alone; subordinating his potential-to-be to his desire for frivolous mass-produced commodities, material possessions and economic acquisitions (Marcuse, 1964; Marx, 1952; Rieff, 1966; Reisman, 1950; Weber, 1977).

Phase three dealt with presuppositions on action and order. While meta-logically it may be impossible to operationalize directly , and thereby falsify, absolute presuppositions (Alexander, 1982), it is certainly possible to test empirical propositions emanating from distinct orientations to action and order positions. In other words, by substantively examining the development, use, and consequences of certain existing theoretical systems, one may determine the validity of the presuppositional commitments from which they are ultimately derived. For example, to the extent that patterns of perceptions,

productivity, and job satisfaction can be predicted by the various individual and aggregate factors from regression analysis in phase one, the premise that action is instrumental and that subjective dispositions are simply responses to external conditions is supported. However, to the extent that the variance among faculty dispositions, attitudes, and behaviors is unaccounted for by social and economic predictor variables several plausible alternatives, related to each phase of the research, are implicated:

Phase One

The first explanation accounting for non-significant findings points to the failure of methodological instruments or biased interview techniques which did not adequately capture the actual determinants of faculty work-related morale. For example, the morale index, which essentially asked professors to codify their feelings towards their work at the University, may be too static to formalize subjective states of mind, which may be dynamic and responsive to evanescent daily conditions. In addition, many professors may be unwilling to relate any negative feelings they might harbor about the institution to a graduate student conducting research. Even these methodological caveats are influenced by more general epistemological questions, however. For instance, testing for "the determinants of faculty morale" begs the question that there are actual sociological and economic phenomena that influence attitude-formation. Although presupposing that external factors potentially influence personal dispositions was necessary in order to conduct any research at all, this does not necessarily mean that a survey questionnaire can

properly record subtle changes in job satisfaction that occur over time.

Phase Two

At the conceptual level, a related explanation for not rejecting the null hypothesis asserts the failure of theoretical models to adequately describe the circumstances. For instance, a major tenet of the status discrepancy hypothesis holds that "objective" disparities affect "subjective" dispositions. However, it is unclear whether these objective inequities can really be influential on attitude-formation if they are not perceived as non-legitimate, structurally located, or temporally enduring disparities. Although a significant number of professors were aware of the degree and direction of their objective status discrepancies, it was also the case that eighty percent of the faculty interviewed reported that their future annual salary increases were going to be comparable to their level of merit. In fact, the University faculty recently received the largest percentage increase in salary raises of any institution of higher learning in the state.

Phase Three

Finally, another potential reason exists for the failure of empirical methods and theoretical perspectives to predict morale levels from external economic and social factors. This explanation is related to general presuppositions about the nature of human action. For example, the weak statistical relationships may be an indication of greater personal autonomy and intrinsic sources of motivation than is usually acknowledged in attitude-formation

literature. In a sense, this topic is the essential issue addressed throughout the thesis study.

In one of the faculty interviews, a biology professor summed up this latter point. He stated, a la Maslow, that "intrinsic rewards for job performance were probably most effective when extrinsic rewards were also satisfactory." Once salary levels reached a certain threshold for meeting essential material needs, he felt that professors derived most of their satisfaction from intrinsic rewards such as teaching and research. Furthermore, he also expressed his belief that professors who were always complaining about the University often tended to be the less productive members in his department, regardless of their level of pay. On the other hand, "Those professors who love their work would perform experiments under the staircase in the basement, without laboratories or other forms of University support", he asserted.

His remarks do not simply glorify the importance of intrinsic rewards, nor do they over-emphasize the role of individual responsibility for personal achievement. Likewise, they do not merely represent a naive acquiescence towards the status quo of the University's resource-allocation inequities. They illustrate instead an essential interaction between material economic conditions, on the one hand, and ideal sources for faculty morale. Faculty members are probably most satisfied with their jobs when both material and ideal dimensions are fulfilled. It is conditional probability, contingent upon specific empirical circumstances, which of these factors are most responsible for morale at the University. The question cannot

be answered categorically by definitional fiat, nor can it be resolved in the abstract.

Only by achieving analytical sensitivity to concrete and abstract levels of investigation could substantive research truly be instantiated into the multidimensional theoretical framework. By adopting a complementary epistemological orientation, the current study operationalized and instantiated Alexander's notion that faculty dispositions would be relatively independent of external, material, and normative surroundings to the degree that a professor could refer to symbolic ideals, internal and supra-institutional referents for satisfaction and personal actualization (Alexander, 1983: p. xxi). In terms of the theoretical framework, the lack of any strong statistical correlation between predictor variables and morale levels has implications beyond empirical methods and theoretical frameworks. Most significantly, these findings reveal that attitudes at the University do not necessarily mirror the external, objective conditions. Reiterating and restating an earlier point, it was substantive research of empirical conditions that demonstrated the lacuna between objective conditions and subjective dispositions. However, it was the complementary meta-theoretical framework that enabled these epistemological dimensions to be articulated and integrated. This corresponds to the later durkheimian notion that man is not motivated solely by his quest for accumulation and possession, and it also opens up the possibility for volitional action (Durkheim, 1965: pp. 662-696).

Obviously, the proposition that faculty members exhibit more

volition in their attitude-formation processes than is usually granted to the actor from the positivistic persuasion is not "proven" simply by the non-significant relationship between economic and social indicators and job satisfaction. However, the lack of strong correlations suggests the need for epistemological flexibility and multidimensional presuppositions on action and order, which acknowledges the possibility for volitional, expressive human action, and social order maintained by normative agreements rather than instrumental coercion.

There is a more abstract conceptual issue being discussed here as well, premised on Alfred North Whitehead's concept of "the fallacy of misplaced concreteness." Although this principle is usually invoked to caution radical empiricists against mistaking their implicit presuppositional frameworks for the reality they claim to study, more multidimensional research programs are equally susceptible to a subtle form of reification. The vulnerability occurs when broad conceptual schemes become hypostatized, and a stultifying objectification of fluid empirical events takes place due to a fetishism of the concepts. In the following discussion, a reflexive caveat is provided to guard against possible misinterpretations of the study's meta-theoretical orientation.

Epistemological multidimensionality can become a hindrance to sociological investigations if the necessary distinction between the analytic and substantive levels of analysis become conflated. If this occurs, complementary presuppositional commitments are no longer merely a statement of what to look at, they become a statement of

what to find. While it is important to be sensitive to theoretical conflations between various dimensions on the scientific continuum, it is also possible that philosophical, or meta-theoretical, conflations may occur as well. For instance, great care was taken during this research to prevent a conflation between epistemological and ontological dimensions of analysis. In this context, the differentiation between the two terms is used to distinguish the unit of analysis (ontological referent) from the methods and analytical schema used to identify and observe it (epistemological orientation). Conflating the objective of analysis with the descriptive and explanatory framework generally occurs when theorists assume that, because they recognize connections between analytical and substantive levels of analysis, the observed world takes on the characteristics of the analytic framework. Such a view is potentially false, because it is based on mistaking the content of the mind for an accurate description of the world as it is.

Therefore, simply attaining a multidimensional analytic perspective towards action and order (epistemological complementarity) does not entail that the unit of analysis (referred to as the ontological entity) necessarily exhibits those traits at the substantive level. Restated at a more concrete level of abstraction, this meta-methodological caveat entails that simply because the study's epistemological orientation accepts that faculty members have the potential for intrinsic sources of work-related morale, therefore professors at the University must necessarily exhibit these tendencies. In other words, it is always a conditional

probability where the material or ideal factors predominate. While it may be ultimately impossible to separate the ontological and epistemological dimensions, the distinction between various meta-theoretical levels is valid and essential for the more limited purposes of this thesis.

TESTING THE META-HYPOTHESES OF PHASES THREE

Two general meta-hypotheses were proposed which summarize the third phase and relate it to the previous two. Meta-hypotheses were used as reflexive, analytical instruments to review the plausibility of certain conceptual and substantive commitments adopted during the actual study. At this level, the reciprocal connection between presuppositions and empirical findings becomes most evident. These meta-hypotheses represent material and ideational factors addressed in substantive hypothesis testing for determinants of faculty morale. Together, the meta-hypotheses express the instantiation of analytic presuppositional commitments with the substantive study of merit and reward processes. The status discrepancy hypothesis is used as an example. Among the three attitude-formation hypotheses, it most clearly captured the dialectic between the material conditions and personal dispositions.

Meta-Hypothesis One

> To the extent that professors derived intrinsic satisfaction from their work there should not be a strong correlation between extrinsic or monetary compensation levels, on the one hand, and faculty productivity levels, personal dispositions, and reported job and salary satisfaction, on the other.

Meta-Hypothesis Two

> To the extent that faculty members reported a reliance on extrinsic rewards for job satisfaction and personal motivation there should be an observable linear relationship between the direction of status discrepancy (positive or negative) and the degree of job and salary satisfaction, research productivity, and work-related morale.

Elaborating on the first meta-hypothesis, if the attitudes and work-related morale of University faculty were shaped by internalized norms, intrinsic satisfaction, or strongly held personal beliefs, then there should have been little variation in expressed dissatisfactions with salary structures and institutional policies between the positive and negative status discrepants. Substantive findings that supported this idealist meta-hypothesis derived from and validated volitional, internal presuppositions on action and its relation to a normative order. Hypothesis one focuses upon the decisive role of personal values regarding productivity and reward; values that are not completely subsumed by external economic forces.

Conversely, in meta-hypothesis two, attitudes and morale held by University faculty were purportedly shaped in response to external material conditions, e.g., salary levels, market conditions, comparisons with other disciplines, promotion rate, access to resources, et cetera. If this was true there should have been less reported alienation, low morale and job dissatisfaction manifested by status discrepant professors with positive residuals than by those with negative residuals. The general presuppositions of this materialistic orientation considered individual dispositions to be regulated by external conditions determining attitudes and behaviors;

work-related morale thus became a linear function of a professor's position within the salary stratification hierarchy.

Each of these meta-hypotheses was theoretically plausible, presuppositionally precise and empirically testable. Hypotheses one and two were ideal types used throughout the study to characterize the idealist and materialist strands of social analysis. Phase three integrates the other two phases by subjecting the two presuppositional positions to an empirical test. Theoretically, this transforms the epistemological complementarity at the analytic level into a test between two competing meta-hypothesis at the substantive level, through the combined use of conceptual reformation and empirical operationalization.

EPILOGUE

Computer-administered survey and interview techniques did not reveal significant differences in job satisfaction and morale between over and under rewarded positions. This finding raised intriguing questions pertaining to the etiology of morale, motivation and job satisfaction. Furthermore, these issues were not satisfactorily resolved by adherence to traditional rationalistic explanations. In this context, rationalism is not synonymous with the epistemological doctrine stating that reason itself and systematic thinking yield truth and knowledge, (as opposed to empiricism and the positivistic emphasis upon experience and direct observation). Instead, rationalism refers to the metatheoretical or "presuppositional" position claiming, implicitly or explicitly, that human behavior is inherently expedient, directed solely toward fulfilling one's own self-interest, with no consideration of ethical values or communal interests. Although the philosophical complications arising from this instrumental perspective on social action are elaborated upon in the phase three synopsis above, other concerns are relevant at the present level of analysis. For example, if researchers assume a priori that individuals act productively only when to do so maximizes their own economic utility, it becomes difficult to explain why undercompensated or lower paid professors do not automatically throw in the towel and "go fishing" (Faia, 1975: p. 4). However, when

less hedonistic, narrowly utilitarian presuppositions are adopted, accounting for the relatively high positive faculty morale and stable productivity levels becomes less perplexing. As an example, since humanities professors may take symbolic "vows of poverty" when they become teachers, as a group they might adapt to lower extrinsic reward levels by learning to cultivate and maintain intrinsic sources of motivation and satisfaction.

Stanford Pinsker's recent essay in The Chronicle of Higher Education provides an apt summary of the ultimate theme in the thesis. In the 1986 article he claimed that his desire to become a professor was motivated by a vision of "a community of kindred spirits, one in which the pursuit of the Good, the True, and the Beautiful mattered more than the pursuit of eight-speed avocado-colored blenders" (Pinsker, 1986: p. 128). Empirical studies supported this anecdotal reaffirmation of the power of intrinsic satisfaction; in a 1973 test of the "over-justification" hypothesis, Lepper et al. determined that "the more you pay a person to do what he would do anyway, the less favorable toward that activity his private attitude becomes." In this case "extrinsic rewards can undermine intrinsic motivation to enjoy a given task" (Lepper, M.R., et al., 1973: p. 129).

Judging from the non-significant nature of the statistical findings, it was concluded that analysis of the determiants of faculty morale supported the intrinsic reward proposition stated in meta-hypothesis one. However, it is equally essential to note the contextual nature of this conclusion. Directly following from the

principle of distinguishing analytic frameworks from substantive conditions comes the realization that the empirical circumstances provided support for the intrinsic reward meta-hypothesis. At another university, or in a different work-setting, alternative economic and social circumstances might potentially prevail. Therefore, it is always a conditional probability whether or not morale and job satisfaction correspond more to instrumental or expressive factors. Without the attention to meta-theoretical issues, (e.g., the necessity for epistemological complementarity), however, many of the general conclusions of the research never could have been discerned or articulated.

It is important to recognize the subtlety and urgency of this multidimensional argument. Conclusions about the etiology of faculty attitudes towards their work were both theoretical and empirical in nature. Not understanding this point creates the illusion that the thesis concludes with the superordination of non-rational aspects surrounding the attitude-formation processes. This conclusion is false, however. Instead, throughout the thesis substantive and analytic arguments have been presented illustrating how sociologists must be more reflective about their presuppositional commitments regarding the nature of human action. It was not the intention to insist that individual dispositions are necessarily independent of their material conditions. On the contrary, the remarks serve as a reminder for researchers to pay more attention towards the theoretical and substantive potential for volitional action inherent in the subjects they observe and interpret. This project was

successful to the extent that it accomplished this task.

APPENDIX A

Survey Questionnaire

1. Please indicate your present academic rank.

   [1] Lecturer
   [2] Instructor
   [3] Assistant Professor
   [4] Associate Professor
   [5] Full Professor
   [6] Eminent Scholar

2. What kind of academic appointment do you have at William and Mary?

   [1] Regular with tenure
   [2] Regular without tenure
   [3] Acting
   [4] Visiting

3. Do your interests lie primarily in teaching or in research?

   [1] Very heavily in research
   [2] In both, but leaning toward research
   [3] Equally balanced between research and teaching
   [4] In both, but leaning toward teaching
   [5] Very heavily in teaching
   [U] Uncertain

4. On a scale from 1 to 9, how would you rate your performance as a publishing research scholar in your field?

   1 2 3 4 5 6 7 8 9
   |---|---|---|
   Low Medium High

   [U] Uncertain

5. Compared with the average professor at William and Mary, do you believe that your performance as a research scholar is:

   [1] much better than average?
   [2] somewhat better than average?
   [3] about average?
   [4] somewhat less than average?
   [5] much less than average?
   [U] Uncertain

6. Compared with the average professor at William and Mary, do you believe that your performance in the area of service to the college is:

   [1] much better than average?
   [2] somewhat better than average?
   [3] about average?
   [4] somewhat less than average?
   [5] much less than average?
   [U] Uncertain

7. During your time at William and Mary, have you ever applied for a position at another university?

   [1] Yes
   [2] No

** If you answered YES to question 7, please continue..
** If you answered NO to question 7, please skip to question 9.

8. Approximately how many such applications have you made while a professor at William and Mary?

   [1] One to two
   [2] Three to four
   [3] Five to six
   [4] Seven to eight
   [5] Nine to ten
   [6] Ten or more

9. Do you believe that, given your level of merit over the last few years, your current salary is less than it should be, greater than it should be, or about right?

   [1] Much greater than it should be
   [2] Somewhat greater than it should be
   [3] About right, where it is
   [4] Somewhat less than it should be
   [5] Much less than it should be
   [U] Uncertain

10. On a scale from 1 to 9, how would you rate your performance as a teacher in your field?

    1 2 3 4 5 6 7 8 9
    |---|---|---|
    Low Medium High

    [U] Uncertain

11. Compared with the average professor at William and Mary, do you believe that your performance as a teacher is:

    [1] much better than average?
    [2] somewhat better than average?
    [3] about average?
    [4] somewhat less than average?
    [5] much less than average?
    [U] Uncertain

12. Are your teaching responsibilities for this academic year:

    [1] entirely undergraduate?
    [2] some undergraduate, some graduate?
    [3] entirely graduate?
    [4] Not teaching this year

13. On a scale from 1 to 9, how would you rate your performance in the area of service to the college?

    1 2 3 4 5 6 7 8 9
    |---|---|---|
    Low Medium High

14. During your time at William and Mary, how many full-time job offers have you received from non-academic employers?

    [1] None
    [2] One to two
    [3] Three to four
    [4] Five to Six
    [5] Seven to Eight
    [6] Nine to ten
    [7] Ten or more

15. How many articles have you published in academic or professional journals during your entire career?

    [1] None
    [2] One to two
    [3] Three to four
    [4] Five to ten
    [5] Eleven to twenty
    [6] More than twenty.

16. How many books or monographs have you published or edited, alone or in collaboration with others, while a professor at William and Mary?

    [1] None
    [2] One to two
    [3] Three to four
    [4] Five or more

17. How many of your professional writings have been published or accepted for publication in the last five years?

    [1] None
    [2] One to two
    [3] Three to four
    [4] Five to ten
    [5] More than ten

18. Have you ever been invited to another academic institution for a job interview during your time at William and Mary?

[1] Yes
[2] No

19. During your time at William and Mary, have you ever received a job offer from another academic institution?

[1] Yes
[2] No

**If you answered YES to question 19, please answer the following question.
** If you answered NO to question 19, please skip to question 21.

20. How many such offers have you received during your time at William and Mary?

[1] One to two
[2] Three to four
[3] Five to six
[4] Seven to eight
[5] Nine to ten
[6] Ten or more

21. In general, how do you feel about working at the College of William and Mary?

[1] It is a very good place for me.
[2] It is a fairly good place for me.
[3] It is not the place for me.
[U] Uncertain

22. During the last five years, roughly how much have you earned over and above your basic salary from sources such as summer grants, outside consulting, federal or state funding agencies, et cetera? (Please estimate as a percentage of your basic salary.)

[1] 0%
[2] Under 10%
[3] 10-19%
[4] 20-29%
[5] 30-39%
[6] 40-49%
[7] 50% and over
[D] Don't know

23. At the present time, do you feel that you are rewarded in proportion to the quality of your job performance?

[1] Definitely not
[2] Probably not
[3] Undecided
[4] Probably yes
[5] Definitely yes

24. Looking ahead to the salary adjustments at the end of the current school year, do you believe that your merit rating will be the primary basis on which your salary adjustment will be granted?

[1] Definitely not
[2] Probably not
[U] Uncertain
[4] Probably yes
[5] Definitely yes

**If you answered 1 or 2 for question 24, please answer the following question.
**If you answered 4 or 5 for question 24, please skip to question 26.

25. Please indicate which of the following you anticipate as the primary basis for your salary adjustment:

[1] Political connections
[2] Market factors
[3] Both of the above
[4] Neither of the above
[U] Uncertain

26. Would you characterize your recent scholarship, research, or creative writing as:

Yes	No	
[1]	[2]	pure (i.e., basic)?
[1]	[2]	applied?
[1]	[2]	literary or expressive?
[1]	[2]	policy-oriented?

27. Are you currently engaged in any scholarly or research work which you expect to lead to publication?

[1] Yes
[2] No
[U] Uncertain

28. How much opportunity do you feel you have to influence the policies of your department?

[1] A great deal
[2] Quite a bit
[3] Some
[4] Very Little
[5] None
[U] Uncertain

29. How actively involved are you in the faculty government of William and Mary (i.e., committee memberships, faculty meetings, et cetera)?

[1] Much more than average
[2] Somewhat more than average
[3] About average
[4] Somewhat less than average
[5] Much less than average
[U] Uncertain

30. How much opportunity do you feel you have to influence the basic policies of William and Mary as an institution?

[1] A great deal
[2] Quite a bit
[3] Some
[4] Very little
[5] None
[U] Uncertain

31. How would you compare your overall work satisfaction today with your work satisfaction five years ago?

[1] Much higher than before
[2] Somewhat higher than before
[3] About the same as before
[4] Somewhat lower than before
[5] Much lower than before
[U] Uncertain
[I] Inapplicable

32. What is your current marital status?

[1] Married (only once)
[2] Married (remarried)
[3] Separated
[4] Single (never divorced)
[5] Single (divorced)
[6] Widowed

33. Knowing what you know now, if you had to decide all over again whether to become a professor, what would you decide?

[1] Decide without hesitation to become a professor
[2] Have some second thoughts
[3] Decide definitely NOT to become a professor
[U] Uncertain

34. How active are you in your own department's affairs?

[1] Much more than average
[2] Somewhat more than average
[3] About average
[4] Somewhat less than average
[5] Much less than average
[U] Uncertain

35. In the past 12 months, did you (or your project) receive research support from:

Yes	No	
[1]	[2]	institutional or department funds
[1]	[2]	federal agencies?
[1]	[2]	state or local government agencies (excluding William and Mary)?
[1]	[2]	private foundations?
[1]	[2]	private industry?

36. During the past two years, have you served as a paid or unpaid consultant to:

1. Yes, paid
2. Yes, unpaid
3. No

[1]	[2]	[3]	state or local government agencies or schools?
[1]	[2]	[3]	private business or industry?
[1]	[2]	[3]	a non-profit foundation?
[1]	[2]	[3]	The federal government or a foreign government?
[1]	[2]	[3]	a university-based research project?

37. The following question focuses upon several different aspects of job satisfaction. You are asked to indicate the degree to which you agree or disagree with the statements.

1. Strongly agree
2. Agree
3. Undecided
4. Disagree
5. Strongly disagree

[1]	[2]	[3]	[4]	[5]	My academic work is usually interesting enough to keep me from getting bored.
[1]	[2]	[3]	[4]	[5]	I consider being a professor a rather unpleasant occupation.
[1]	[2]	[3]	[4]	[5]	I enjoy my work more than my leisure time.
[1]	[2]	[3]	[4]	[5]	I feel fairly well satisfied with my job.
[1]	[2]	[3]	[4]	[5]	Most of the time I have to force myself to work.
[1]	[2]	[3]	[4]	[5]	I feel that I am happier in my work than most other people.
[1]	[2]	[3]	[4]	[5]	I definitely dislike my work.
[1]	[2]	[3]	[4]	[5]	I like my job better than the average professor does.
[1]	[2]	[3]	[4]	[5]	I find real enjoyment in my scholarly work.
[1]	[2]	[3]	[4]	[5]	I am disappointed that I ever came to William and Mary.
[1]	[2]	[3]	[4]	[5]	There are some conditions concerning my job as a professor that could be improved.
[1]	[2]	[3]	[4]	[5]	My job is usually pleasant, like a hobby.
[1]	[2]	[3]	[4]	[5]	It seems that my non-professor friends find their careers more stimulating and challenging than I find my career.

38. If you were able to complete your education all over again, would you choose to enter the same academic field?

[1] Yes
[2] No
[U] Uncertain

39. How would you compare the following aspect of your work situation today with the situation five years ago?

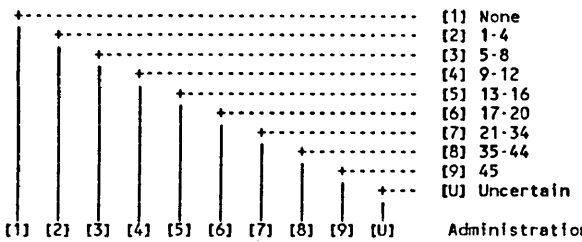
1. Much better
2. Somewhat better
3. About the same
4. Somewhat worse
5. Much worse
6. Uncertain
7. Inapplicable

[1]	[2]	[3]	[4]	[5]	[U]	[I]	Your teaching load
[1]	[2]	[3]	[4]	[5]	[U]	[I]	Your research load
[1]	[2]	[3]	[4]	[5]	[U]	[I]	Your service load
[1]	[2]	[3]	[4]	[5]	[U]	[I]	The morale of your department
[1]	[2]	[3]	[4]	[5]	[U]	[I]	Future job prospects for students majoring in your academic discipline
[1]	[2]	[3]	[4]	[5]	[U]	[I]	The resources of Swem Library
[1]	[2]	[3]	[4]	[5]	[U]	[I]	The resources and facilities of the Computer Center

40. During this academic year, are you carrying what your own department considers a full load, or is your teaching load reduced for research, college service, or for any other reason

[1] Full teaching load
[2] More than half, but less than full-time
[3] Half teaching load
[4] Less than half teaching load

41. During the present semester, how many hours per week are you spending, on the average, in the following activity?



[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[U]	Administration
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[U]	Scheduled teaching (give actual contact hours)
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[U]	Preparing for teaching (include reading student papers and grading)
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[U]	Advising and counseling students
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[U]	Research and scholarly writing

Thank you for your assistance on this questionnaire

APPENDIX B

Breakdown of Faculty Morale
by Rank, Seniority, Salary,
and Academic Area.

POPULATION --- STATISTICS

Mean faculty morale at University....: 52.3778
Standard deviation.....: 4.3967
Number of sample cases.....: 45

Criterion variable: MORALE Faculty Morale scores
Broken down by....: RANK86 1985 rank of professor

Current Rank	MEAN	STD DEV	CASES
Assistant Professor	52.2500	3.5355	8
Associate Professor	50.5000	4.6534	14
Full Professor	53.2632	4.5685	19
Eminent Scholar	55.0000	2.1602	4
Total cases = 45			

Criterion variable: MORALE Faculty Morale scores
Broken down by....: SALARY85 Salary of professor

1985 Salary	MEAN	STD DEV	CASES
20,000-29,999	49.8750	5.2491	8
30,000-39,999	51.6957	4.1499	23
40,000-49,999	54.2222	3.3082	9
50,000-59,999	56.0000	2.9439	4
60,000-69,999	57.0000	.0000	1
Total cases = 45			

Criterion variable: MORALE Faculty Morale scores
Broken down by....: SENIOR Years in academia

Years seniority	MEAN	STD DEV	CASES
1 thru 10	52.5000	4.1670	12
11 thru 20	52.8261	4.4380	23
21 thru 30	51.2222	5.0936	9
31 thru 40	51.0000	.0000	1
Total cases = 45			

Criterion variable: MORALE Faculty Morale scores
Broken down by....: AREA Academic area

	MEAN	STD DEV	CASES
Humanities	54.1667	2.9944	6
Social Sciences	51.1818	5.2691	11
Physical Science	52.2308	5.0358	13
Professional Schools	52.6667	3.6580	15
Total cases = 45			

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